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MAJOR CROP PROGRESS AND WEATHER REPORTING

HARVEST PROGRESS, WEATHER CONDITIONS IN SOUTHERN KAZAKHSTAN

Alma Ata KAZAKHSTANSKAYA PRAVDA in Russian 19 Jul 85 p 1

[Article by Yu. Livinskiy, special correspondent, Chimkent Oblast:
"The Grain of Sayram"]

[Excerpts] The grain harvest is being completed in Sayram Rayon. The gathering of grain crops is being continued on the last hundreds of hectares in the foothills and mountainous areas. All the other farm-machine operators have switched over to the delivery of grain gathered in the present harvest into the state granaries, to the storage of seed and forage in warehouses and the inception of autumn plowing.

What has this year's harvest toil shown? The Sayram grain-growers, who have reinforced their reputation as masters of the grain field, obtained overall 15 quintals of grain per hectare. Although they are listed second in harvest productivity in the oblast, somewhat behind the farmers of Lengerskiy Rayon, such returns do not completely satisfy them. The grain could have been significantly better. The severe prolonged winter affected the yield adversely: part of the winter crops died and had to be resown. The resown lands yielded altogether 5-7 quintals of grain under dry spring and summer conditions; this lowered total harvest productivity.

Yet all the same, a number of farms may be proud of this year's harvest. The rayon's farms are switching over to preparation of newly-harvested grain and its transfer to state granaries.

The farmers of Sayram have already fulfilled six one-year plans in the current Five-Year Plan for sale of grain to the state. Moreover, the harvest of another grain crop--maize--is ripening on the fields. Thus, the Sayram farmers can still significantly increase their contribution to the oblast's grain balance in the autumn.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

REPORTS SHOW SOME REGIONS OVERFULFILL HARVEST PLAN

Alma Ata KAZAKHSTANSKAYA PRAVDA in Russian 2 Aug 85 p 1

[Article by Yu. Livinskiy, special correspondent, Chimkent Oblast: "At the End of the Harvest"]

[Excerpts] The grain harvest is being completed in Southern Kazakhstan. The farm-machine operators need only harvest crops from the last thousands of hectares located high in the mountains. Now farms are concentrating mainly on preparing grain and taking it to state granaries as well as laying by seed and forage.

This year, the harvest toil was somewhat prolonged in the oblast. This is chiefly explained by the fact that in the spring, on large areas, it was necessary to resow the winter crops that had died. As a result the grain ripened later than usual. This was especially noticeable on the grain fields of the mountainous sections, where the sowers' work lasted right up to May.

The last harvest units have left the grain fields in Sayramskiy Rayon. Disregarding the unfavorable conditions of this year, the farms obtained an average 15.5 quintals of grain per hectare. In the Five-Year Plan as a whole Sayramskiy Rayon fulfilled six and some one-year plans for sale of grain to the state.

"Yet we intend to fulfill seven one-year plans by the end of the harvest toil," explained S. Tereshchenko, first secretary of the Party's Lenger Raykom. "In our rayon the harvest has not yet come to an end."

In neighboring Leninskiy Rayon all farms except Kommunizm Sovkhoz--one of the largest providers of sale grain in the oblast--have completed their harvest.

One lesson learned in this year's harvest should be stated. The farm-machine drivers of Kommunizm Sovkhoz go out at the beginning of each year's harvest toil to help gather grain on other farms of the rayon, which are located in the steppe zone. They work there assiduously with complete devotion, as if

it were their own field. Later, when their grain has ripened, the neighbors aid them as well. But this help, unfortunately, is ineffective more often than not. This year's work of 55 combines sent here from the sovkhoses imeni Zhdanov, Chanakskiy and Kuyuk. . . The grain production for the 8-10 days of harvest for one outside unit amounted to around 13 tons. But many had even less--1.5-4 tons apiece. Why did this happen? The fact is that the neighboring farms as a rule send over here the least experienced farm-machine operators, who cannot driver combines under mountainous conditions and RAPO does not monitor the qualitative makeup of the farm-machine operator group. The result is that for many combine operators helping turns into a vacation in the mountains.

The harvest toil in the oblast is being completed. The farmers of Southern Kazakhstan finished their Five-Year Plan for grain ahead of time. They still have two grain operations before them--those on maize plantations and in the rice fields. So the farmers of Chimkent can still increase their contribution to the Kazakhstan convoy.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

FODDER ROOT CROP FIELD OPERATIONS OUTLINED

Minsk SELSKAYA GAZETA in Russian 9 Jul 85 p 3

[Article by N. Kulak, senior scientist, BelNIIZR: "Fodder Root Crops," "Attention Growers!"]

[Text] The following operations should now be scheduled for fodder root fields under present weather conditions. First, the soil between rows should be loosened to a depth of 10-12 cm with the chisel point and sweep blades. At the same time, top dressings of mineral, liquid and local fertilizer should also be applied, particularly where tilling was inadequate during the first application.

In the days immediately ahead growers should complete their second round of weed-control operations and another check of the condition of the crops, to include the removal of secondary growths and unnecessary beet plants which have been overlooked. Herbicides applied after the sprouts appear will be ineffective, what with the fact that the weeds have already begun to develop and increased doses of the Betanal will burn the plants.

Fields in which the crop has thin spots should either get new beet or turnip plants or be seeded in these places with turnip. Transplanted sprouts would do well under present weather conditions.

Growers should not lose sight of the dangers posed by root crop pests (beet leaf miner, carrion beetle etc.). Aphids have appeared on fodder beet transplants. Seed plants should therefore be treated with toxic chemicals before the blossoms appear.

Now is the time to begin the mowing-time turnip planting [poukosnyy posev turnepsa], which is a good way to help increase fodder root crop productivity.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

BELORUSSIAN CROP PEST INFORMATION

Minsk SELSKAYA GAZETA in Russian 26 Jun 85 p 3

[Article by V. Kurilov, director, BelNIIZR Potato Protection Laboratory: "Attention Growers!"]

[Text] The development of the Colorado potato beetle and the prevailing weather conditions are indicating that the best time to apply insecticide against the young larvae are almost here—the end of June for the southern part of the republic, early in the first 10 days of July for the rest of it. Crop protection service experts and the farm crop specialists should therefore begin now to maintain a daily watch on the development and spread of this pest and when the recommended time arrives begin the treatment of their potato fields.

Treatment should begin on fields in which infestation has reached 10 per cent with the number of individuals per plant running in the neighborhood of 20 during the period in which the young larvae begin to appear on a massive scale.

Now available in the republic are the following insecticides which are recommended for use against the Colorado potato beetle: Chlorophos, Volaton, Phozalon, Tsimbush, Dursban, Phthalophos, Sherpa, Detsis and Rovikurt [transliterations]. Applications of all preparations should be stopped at least 20 days before harvest, 30 days in the case of Dursban and Phozalon. All crop specialists have information on recommended conditions and applications.

The bacterial preparation Bitoksibacillin is among the biological preparations available in the republic for use against the Colorado potato beetle this year. It has proved fairly effective against the young Colorado potato beetle larvae. It should be applied in doses of 2 kilograms per hectare and can be applied right up until harvest time as frequently as 3 times every 12-14 days. This preparation is available retail in 200 gram packages and could find extensive application on the private plots.

Phytophthora is among the most dangerous of the potato diseases. As a rule it will begin to develop in the tops of the early varieties during the full-bud stage or as the plant begins to blossom. In treating plants against phytophthora infection, particular attention should be given to treatments of the early-maturing varieties, given the fact that these varieties can become sources for the accumulation and then spread of the infection.

Growers should begin their first spraying upon notification by the warning and forecasting centers or during the period in which each variety begins to develop its potato (at the end of the budding stage and the beginning of the blossoming stage). The second and subsequent sprayings should be applied to the early and other varieties every 5-7 days during rainy weather, every 10-12 days under normal conditions. At the first sign of infestation in the early potatoes growers should apply the first treatment to midseason-maturing varieties and then the second to the early potatoes. Apply the first treatment to late varieties when indications of infestation appear in the midseason-maturing varieties or simultaneously with the third treatment of the early potatoes.

Available for use against phytophthora infection are preparations which work on contact and some in the category of systemic preparations (which work inside the plant). The contact fungicides destroy the primary centers of the infection before the disease attacks the plants; they reduce the level of infection and limit the development of the spores directly on the plants themselves. The systemic fungicides also eliminate the agents of this disease which may have penetrated the inner tissues of the leaves and the tubers. It is recommended that one of the contact fungicides be used for the first preventive application against phytophthora and other diseases. These would include the following: Kuprozan (Khometsin), Tsineb or polikarbatsin [transliterations].

If the grower has supplies of the systemic fungicide Ridomil available he can use tank mixtures of Ridomil and Kuprozan, Tsineb or polikarbatsin for the second and third sprayings. Kuprozan or Tsineb should be used for any other sprayings which may be necessary. If no Ridomil is available, Kuprozan, polikarbatsin or Tsineb should be used in alternating applications.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

CROP FORECASTS FOR GOMEL, VITEBSK AND MOGILEV OBLASTS

Minsk SELSKAYA GAZETA in Russian 20 Jun 85 p 1

[Article: "Attention Growers!"]

[Text] The onset of cooler weather during the second 10-day period of June, the large amount of rain, frequently heavy, and the strong winds in a number of areas, particularly in Brest and Gomel oblasts, have combined to create a set of difficult field conditions. Grain fields, and most importantly here, the winter crops, have been beaten down or flooded in places. The rain has packed the soil fairly tightly, which inhibits the nitrification process. Root borer infestations have begun to spread in the sugar and fodder beet fields.

The weather situation has now improved somewhat. Under present conditions the agricultural service should maintain a close watch over conditions prevailing in the fields. If this is possible, it should begin by monitoring the drying process in the flooded areas. As soon as it becomes possible, farmers should get back into the fields to loosen the soil between the rows in the row crops, first and foremost in the sugar and fodder beet fields, and apply nitrogen top dressing. This will improve the air-water regime in the soil substantially and prevent the development of root borer infestation. If no dry nitrogen fertilizer is available for row-crop top dressing, growers can use diluted liquid manure.

Barley fields which have been seriously infested by net blotch should be treated by fungicide: Tilt or Bayleton or, if these are unavailable, Tsineb or polikarbatsin.

Weed eradication operations in the flax fields of Vitebsk and Mogilev oblasts have yet to be completed, although the period during which this can be done has almost come to an end. Growers should therefore step up the pace of these operations immediately with the use of both field machinery and aircraft.

Excessive moisture can contribute to outbreaks of phytophthora infection, while toward the end of June the southern part of the republic should expect the Colorado beetle larvae to begin hatching on a massive scale. Farm crop experts and the crop protection service should therefore monitor the condition of their crops closely and when necessary undertake preventive treatments of their potato fields to protect against phytophthora with simultaneous treatments for Colorado potato beetle.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

BELORUSSIAN CROP PEST AND DISEASE REPORT AND FORECAST

Minsk SELSKAYA GAZETA in Russian 4 Jun 85 p 2

[Article by N. Kharchenko, director, BelNIIZR Forecasting Laboratory, and Ye. Kolonitskaya, director, Republic Forecasting Laboratory: "Survey of the Development and Spread of Crop Pests and a Forecast of Appearances during the First 10 Days of June"]

[Text] Large swarms of egg-laying beet-leaf miner flies have been observed in the beet fields. As compared with previous years (1982-1984), all fields appear to be much more heavily infested, estimates ranging between 47 and 100 per cent. Reports from the Bobruysk, Brest, Gomel, Rechitsa, Volkovysk and Grodno areas are that hatching has begun and the caterpillars have already started their destructive work. Eggs are expected to hatch on a massive scale in the southern and central parts of the republic and crop damage to appear during first 10 days of June, during the second 10-day period in the north. To prevent any extensive damage to the surface of the leaves, the beet fields should be treated with a systemic preparation—a 40-per cent concentrate emulsion of phosphamide applied 0.8-1.0 kg/ha.

Carrion beetles continue their attack on the young beet plants. This pest poses a danger to late beets in the central and northern parts of the republic. When it appears in numbers above the threshold level, growers should apply 80-per cent Chlorophos surface-active powder or a 20-per cent concentrate of methyl parathion emulsion 1.5 kg/ha or a 40-per cent concentrate of phosphamide emulsion 0.8-1.0 kg/ha.

Late-planted summer grain crops will be threatened by Swedish fly in Vitebsk Oblast. If warm weather continues the numbers of this pest will increase. Areas in which it appears in densities greater than 25-30 per reference unit should be treated with a solution of 80-per cent surface-active Chlorophos powder or 20-per cent concentration of methyl parathion emulsion 1.0 kg/ha.

Large concentrations of egg-laying Colorado potato beetles have appeared in private-plot potatoes in the southern and central parts of the republic. Densities are high (3-5 beetles per plant) with 30-70 per cent infestation. Growers should begin immediately to remove these beetles by hand and destroy any eggs which have been laid.

This beetle has also been spotted on tomatoes and young potato plants in the production fields. Reports from the Brest, Baranovochi, Khoyniki, Lelchitsy and Bragin areas shows infestation rates ranging between 5 and 25 per cent and densities of 1-2 beetles and 8-10 eggs per plant, infestations of 1-10 per cent and densities of 1-1.5 beetles per plant in the areas around Slutsk, Minsk, Volkovysk, Grodno and Mogilev. No beetles have been reported in potato fields in the vicinity of Vitebsk. Growers in the southern part of the republic can expect oviposition and the hatching of larvae on a massive scale during the second 5-day period in June. Fields in some areas will require insecticide treatments on a selective basis.

When potatoes have completely sprouted (15-18 cm) on the republic's elite seed-growing farms (in the primary nurseries and superelite and elite fields), growers should begin their first thinning.

Codling moths have been reported in the air in Brest and Gomel oblasts and Bobruysk, Volkovysk, Grodno, Iyve and Slutsk rayons. The first eggs should be laid toward the end of the first 10 days of June. General preparations for the application of Trichogramma should begin now, while growers should prepare to apply insecticide to orchards in the intensive programs.

Clover-seed eaters will pose a danger to clover seed fields. When budding begins the uncut clover should be treated with 80-per cent surface-active Chlorophos powder 0.8-1.5 kg/ha or a solution of 20-per cent concentration of methyl parathion emulsion 0.5-1.0 kg/ha.

The brome grass midge has now been sighted in the air in the southern part of the republic. When the awnless brome grass puts out the panicle growers should spray seed plants with the preparations referred to above (1 kg/ha).

High numbers of rape curculios have been reported on the vegetable and feed-crop crucifers. When 3 or more beetles appear on a plant during the budding stage growers should spray with 80-per cent surface-active Chlorophos powder 1.5 kg/ha or 40-per cent concentration emulsion 1.0 kg/ha.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

BELORUSSIAN PEST AND DISEASE FORECAST FOR LATE JUNE-EARLY JULY

Minsk SELSKAYA GAZETA in Russian 25 Jun 85 p 3

[Article by Ye. Kolonitskaya, director, Republic Forecasting Laboratory, and N. Kharchenko, director, BelNIIZR Forecasting Laboratory: "Forecast," "Appear- and Spread of Agricultural Pests and Diseases in the Belorussian SSR during the Last 10 Days of June and the First 10 Days of July"]

[Text] Cold weather during the second 10 days of June not only inhibited development of the Colorado potato beetle, it also destroyed some 18-25 per cent of the eggs and newly hatched larvae. The onset of warmer weather, however, this pest began laying more eggs, resulting in the hatching of new larvae and the beginning of more destructive activity. Field workers will begin thinning the potato crop sometime between the 25th and 28th of June in Gomel Oblast, on June 29 in Brest Oblast and sometime during the first 10 days of July in the rest of the republic.

If conditions are favorable, the end of July and the first 10 days of July will possibly see the first spots of late blight appear on the leaves of the potato plants. In order to prevent the occurrence and then the spread of this disease it will be necessary to begin fungicide treatments on the potato fields immediately upon notification from the warning and forecasting center: first with domestic preparations, a second with Ridomil and then one with domestic preparations.

Helminthosporiosis has now appeared in barley fields in the majority of rayons in Minsk, Brest, Grodno and Mogilev oblasts. As compared with the infestations of past years, the development and spread of the disease this year has remained at a fairly low level, which for all practical purposes does not exceed 20 per cent. After the recent rains, however, the expectations are for an intensification in the development of this disease along toward the end of June. Plants should be sprayed during the period from the appearance of the flag leaf to the beginning of ear formation when a spot can be identified on the second leaf from the top. Bayleton or Tilt (0.5 kilogram per hectare) should be used for this application.

Greenbugs can develop in moderately wet weather. Heavy infestations (3-8 per plant) have been reported in Klimovichskiy Rayon in Mogilev Oblast.

Winter crops are vulnerable to attack by brown rust and powdery mildew.

Particular attention should be paid to grain crops which are being cultivated by the new methods.

The onset of warmer weather has brought new reports of large numbers of beet leaf miner fly eggs being laid in beet fields in Vitebsk and Minsk oblasts. This fly will appear in large numbers and can do extensive damage to the surface of a leaf if systemic insecticides are not applied in a timely manner. It is anticipated that the seed beet fields will see the occurrence and spread of the beet aphid.

Cabbage and cabbage white butterfly and cabbage moth caterpillars are still attacking fields in the southern rayons of Brest and Gomel oblasts, and cabbage cutworm caterpillars are now beginning to hatch. Newly laid eggs have been spotted in Slutskiy and Borisovskiy rayons in Minsk Oblast as well as in Grodno, Gomel and Brest oblasts. Trichogramma should be applied to reduce the cabbage cutworm infestation and destroy the eggs.

Crucifers can be attacked by blossom beetles and rape sawfly pseudocaterpillars. There have been widespread reports of massive swarms of sawflies and newly laid eggs. Infestations and damage due to the pseudocaterpillars are expected to be extensive and require applications of insecticide.

Trichogramma should be applied to orchards in the central and northern parts of the republic to destroy codling moth eggs.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

MEASURES TO PROTECT BELORUSSIAN VEGETABLE CROPS URGED

Minsk SELSKAYA GAZETA in Russian 14 Jul 85 p 3

[Article by V. Sidlyarevich, director, Vegetable Crop Protection Laboratory, BelNIIZR: "Attention Vegetable Growers! Let's Protect Our Crops from Pests and Disease"]

[Text] Our vegetable harvests depend on the steps we take to protect the plants against pests and disease. Cabbage, one of our most important vegetables, is particularly vulnerable. Cabbage moth and cabbage and cabbage white butterfly caterpillars are now attacking crops in the southern part of the republic. To protect against the caterpillars of these pests calls first and foremost for the application of biological preparations—Dendrobatsillin or Entobakterin—once or twice during the season in July and August. If these preparations are not available use Chlorophos or Malathion.

In the southern and central parts of Belorussia the cabbage cutworm is still laying eggs. Trichogramma should be used to destroy the eggs of this pest. A cutworm form of Trichogramma is used at the beginning and then at approximately the half-way point during the period in which this pest lays its eggs. The size of the application will depend on the extent of the infestation. If as many as 5 eggs are found on a plant the recommended application is 80,000 Trichogramma per hectare, 240,000 if there are more than 5 eggs. If Trichogramma has not been used, the biological preparation Bitoksibatsillin can be applied against the young caterpillars. Cabbage fields should be treated 1-2 times every 10-12 days.

If a farm has no available supply of biological agents to use against cabbage cutworm caterpillars in the first or second stages of growth, the cabbage should be treated with Chlorophos or Malathion.

At the end of July or the beginning of August, upon notification by the warning and forecasting service, growers should apply Chlorophos or phosphamide against turnip maggots. Chlorophos treatments should be stopped 15 days before harvest, phosphamide treatments 30 days prior to harvesting.

Cabbage aphids have been detected on cabbage seed plants in the central part of the republic. Moderately wet weather will promote the multiplication of this pest. To protect plants against this aphid they should be sprayed with phosphamide or Antio.

Disease, too, poses a great danger for seed plants, particularly the Alternaria blight, which sharply reduces the germination rate and absolute weight of the seeds produced. To protect cabbage seed plants against disease—Alternaria blight, downy mildew and phomosis, for example—growers should apply Bordeaux liquid with a sticker added as soon as the word comes from the warning and forecasting service that the first indications of any of these diseases have been identified. Crops should be treated 2-3 times every 7-12 days.

Late blight is the most dangerous and destructive of the tomato diseases. To protect against this threat, growers should spray plants with Bordeaux liquid, Kuprozan (Khometsin), polikarbatsin or Tsineb [transliterations]. Tomatoes should be treated when the first disease spots appear. Subsequent treatments should follow every 10-12 days, every 5-7 days during rainy weather. Applications of Bordeaux liquid should be stopped 8 days prior to harvesting, 20 days in the case of Kuprozan, polikarbatsin and Tsineb. During the period of infructescence plants may be treated every 15-18 days with a garlic infusion on the second cluster (up to 5 applications).

To destroy onion snout beetle larvae, which go into the soil to pupate, the soil between rows should be loosened.

Perenosporosis, or downy mildew of onion, is one of the most dangerous of the onion diseases, the onion seed plants being the hardest hit. It turns leaves yellow and stunts growth severely. This disease poses a particularly serious threat in rainy weather.

Diseased plants should be systematically culled and removed from the field. With the appearance of the first signs of the disease, onions should be sprayed with Bordeaux liquid, a polikarbatsin suspension or Tsineb. Polikarbatsin and Tsineb should not be applied to the tips of the onions. To destroy the agent which causes this disease, dry small onions in the fall at 40 degrees for 8 hours, the larger onions for 24 hours. Stop applications of Bordeaux liquid and polikarbatsin 15 and 20 days prior to harvesting respectively.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

BRIEFS

KAZAKH HARVEST NEWS—Dzhambul, 11 Jul (TASS)—The farms of Dzhambul Oblast have begun large-scale sale of grain to the state. Many thousands of tons of wheat delivered to the Georgievskiy, Moldybayskiy, Berlikskiy and Chaldovarskiy grain-reception enterprises by the farmers of the Chu Valley have been graded "strong" and "valuable." A considerable increment--up to 50 percent in addition to existing procurement prices--has been paid to sovkhoses and kolkhozes for the high quality of the grain. [Text] [Moscow SELSKAYA ZHIZN in Russian 12 Jul 85 p 1] In Chimkent oblast the harvest is coming to an end. Everywhere now grain is being prepared on the threshing-floors and sent to the state granaries. Over 2,000 drivers of the Chimkent motor-vehicle administration help farms fulfill the first requirement. They have already transferred about 200 tons of newly harvested grain. Every day up to 1,500 heavily-loaded truck trailer trains go out on the road. [Text] [Moscow SELSKAYA ZHIZN in Russian 27 Jul 85 p 1] 9582

HARVEST STATISTICS—According to data from the KaSSR Central Statistical Administration, as of 22 July this year winter and spring grain and leguminous crops (exclusive of maize) had been mown on an area of 1.4 million hectares on the farms of the republic. Eight oblasts are already gathering the harvest. After Chimkent, Dzhambul, Alma-Ata, Taldy-Kurgan and Kzyl-Orda oblasts, Aktyubinsk, Ural and Semipalatinsk oblasts began reaping. The farms of Chimkent Oblast are already close to the completion of grain reaping and threshing, in Dzhambul Oblast 79 percent of the crops have been brought in and in Alma-Ata Oblast half the grain has been mown. The average grain output in a number of oblasts is higher than last year. Thus, in Dzhambul Oblast 11 quintals per hectare have now been harvested, whereas last year 8.3 per hectare were obtained and in Chimkent Oblast the corresponding amounts were 9.3 and 6.6 quintals. Meanwhile the average grain output in the oblasts that have begun harvesting grain, taken as a whole, is about 8.7 quintals per hectare compared to 6.6 quintals last year. [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 30 Jul 85 p 1] 9582

HARVEST CONDITIONS—Dzhambul, 1 Aug-[By SELSKAYA ZHIZN's correspondent] The grain-harvesting combines have left the fields, but the activity at grain-reception points in the oblast has not died down. Grain is arriving at many of them round the clock. The farmers of a number of farms are selling amounts in excess of the plan. Kurdayskiy and Dzhambulskiy rayons were the first to complete the task. They have been followed in above-plan production by the

farmers of Merkenskiy Rayon. They gave the nod to store not less than 70,000 tons of grain, compared to a plan-stipulated 58,000 tons, in the granaries of the Motherland. [Text] Moscow SELSKAYA ZHIZN in Russian 2 Aug 85 p 1]--Alma Ata, 8 Aug]--[By SELSKAYA ZHIZN's correspondent] The farmers of Iliyskiy Rayon required two weeks, despite frequent rain, to complete the mowing of grain crops over the entire area. The harvest was accelerated by widespread use of progressive harvest methods: combine trailer, portioning and shift work. The grain growers of Iliyskiy Rayon were the first in the oblast to fulfill their plan for sale of grain to the state. They have stored over 24,000 tons of grain in the granaries of the Motherland. The farmers of Kaskelenskiy Rayon are also delivering grain in amounts in excess of their plan to the reception centers. By V. Yelufimov [Text] Moscow SELSKAYA ZHIZN in Russian 9 Aug 85 p 1] 9582

GRAIN CORN SOWINGS EXPANDED--Belgorod--The farmers in Belgorod Oblast have established a reliable foundation for the corn harvest. They have completed inter-row tilling on the entire sowing area of more than 300,000 hectares. The grain corn sowings have been expanded -- one fourth of the areas were set aside for this purpose. All of the plantations are being worked by non-schedule teams, which operate on the basis of the industrial technology. [Text] /Moscow TRUD in Russian 11 Jun 85 p 1/ 7026

GROUP METHOD EMPLOYED--Belgorod, 15--Non-schedule teams have commenced their busy harvest campaign out on the fields in Belgorod Oblast. This year all of the grain and technical crop areas have been assigned to such teams. Since the grain crop is of low height, the machine operators have re-equipped the combines for a low cutting. The hoppers of the harvesting machines have been hermetically sealed in a thorough manner. Feed grinders have been installed on the units in the interest of preventing straw and chaff losses. From 8 to 12 combines, all of which operate on the basis of the group method, have been concentrated in each harvesting-transport complex. Making maximum use of the advantages offered by the collective contract, the oblast's farmers intend to complete their harvest work in just 10-12 working days. [Text] /Moscow SELSKAYA ZHIZN in Russian 16 Jul 85 p 1/ 7026

THIRD WATERING STARTED--Belgorod--The farmers at kolkhozes and sovkhoses throughout the oblast have commenced their third watering of the crops. [Text] /Moscow TRUD in Russian 13 Jun 85 p 1/ 7026

MASS SOWING OPERATIONS--Tambov--Non-schedule collectives on farms throughout the oblast have commenced the mass sowing of early grain crops and annual grasses. While striving to reduce the field work schedules to a minimum, the machine operators are preparing the soil around-the-clock and carrying out sowing operations throughout the entire daylight period of the day. [Text] /Moscow SOVETSKAYA ROSSIYA in Russian 25 Apr 85 p 1/ 7026

INTENSIVE TECHNOLOGY--Tambov, 18 Apr--With the aid of agricultural aviation, a top dressing is actively being applied to the winter grain crops on farms in Tambov Oblast. Fertilizer has already been applied to more than 200,000 hectares and this constitutes more than one third of the winter fields. The farm workers are devoting special attention to the crops planted on tracts on which the intensive technology is being employed for the cultivation of grain

crops. The contractual brigades and teams are already displaying concern for the harvest. /Text/ /Moscow SELSKAYA ZHIZN in Russian 19 Apr 85 p 1/ 7026

POOR WEATHER CONDITIONS--Tambov Oblast--One cannot order rainfall. At the beginning of the summer, dry winds rolled in over the fields and meadows in Tambov Oblast and also over neighboring oblasts, thus slowing down the development of the plants. And when the busy period arrived, it was accompanied by prolonged rainfall. Initially the procurement specialists were not pleased by the perennial grasses, which were adversely affected by the drought conditions. Nevertheless, approximately 400,000 tons of hay had to be arranged in stacks and pressed into bales and 360,000 tons of haylage and roughly 3 million tons of silage had to be placed in storage. The farms in Tambov Oblast have already procured 180,000 tons of hay -- more than that for the same period last year and they have also produced more grass meal. The units have been shifted over to the cutting down of annual and wild-growing grasses. /by A. Starukhin/ /Excerpts/ /Moscow PRAVDA in Russian 6 Aug 85 p 1/ 7026

OBLAST COMPETITION LAUNCHED--Voronezh, 11 May--The masters of gold ears in Kantemirovskiy Rayon have launched an oblast competition for high corn yields. They have vowed to obtain 35-40 quintals of ripe grain per hectare. The initiative displayed by the workers in Kantemirovskiy Rayon has been well received. There are now more than 1,400 detachments and teams within the oblast that are cultivating this herculean crop on 100,000 hectares using the grain technology. At the present time, the sowing work is being carried out at a maximum tempo. The machine operators at the Put' K Kommunizmu Kolkhoz in Novokhoperskiy Rayon have outlined great plans. The team headed by the well known corn grower M.I. Avdeyev has resolved to obtain 250 quintals of fodder from an area of 430 hectares. /by A. Kat'kalov/ /Text/ /Moscow SELSKAYA ZHIZN in Russian 12 May 85 p 1/ 7026

GRAIN SALES TO STATE--Voronezh, 19 Jul--In an attempt to prepare in a worthy manner for the 27th CPSU Congress and to make a good contribution towards the Food Program, the grain growers in Rossoshanskiy Rayon have resolved to cut down and thresh the grain crops as rapidly as possible, to fulfill ahead of schedule the plan for selling grain to the state and to deliver 684,000 quintals of grain to the elevators. At the present time, the harvest work in the rayon is being carried out by 23 complexes. Using the two-stage method, these complexes will harvest 62,000 hectares of early grain crops in just 12 working days. Special attention has been given to the quality of the threshing work and to protecting the crops against losses. Towards this end, the equipment, storehouses, dryers and grain cleaning machines were all placed in proper working order in advance. The transport conveyer line from the field to the threshing floor to the elevator is being operated around-the-clock. Immediately following the picking up of the wind-rows, units are moved out onto the fields for the non-plow tilling of the soil. The fine initiative displayed by the workers in Rossoshanskiy Rayon is finding support in the various areas -- at kolkhoses and sovkhoses throughout the oblast. Grain harvest operations are presently being carried out in all areas throughout the oblast. /by A. Katkalov/ /Text/ /Moscow SELSKAYA ZHIZN in Russian 20 Jul 85 p 1/ 7026

PEA HARVEST STARTED--Voronezh, 13 Jul--The oblast's farms have commenced the two-stage harvesting of peas. This protein crop occupies more than 250,000 hectares in the oblast. And it is for this reason that a great amount of

attention is given to it at the beginning of the harvest period. Work out on the fields in the southern and central rayons was started earlier than in other areas. The machine operators in Kalacheyevskiy Rayon had a fine start as they laid out in windrows the first 3,000 hectares of an overall area of 13,000 hectares. The majority of the farms -- the kolkhozes imeni Lenin and imeni Kuybyshev and the Niva Sovkhoz and many others -- plan on completing their pea harvest work in just 6 working days. The pea mowing work is increasing in tempo with each passing day in Vorobyevskiy, Bobrovskiy, Rossoshanskiy, Bogucharskiy, Kantemirovskiy and other rayons. /by A. Katkalov/ /Text/ /Moscow SELSKAYA ZHIZN in Russian 14 Jul p 1/ 7026

GRAIN DELIVERIES--Voronezh, 26 Jul--The harvesting and sale of grain to the state are being carried out in all of the oblast's rayons. The second one hundred thousand tons of grain, consisting mainly of winter wheat, has already been delivered to the granaries of the homeland. The leaders in this regard are the kolkhozes Bolshevik, imeni Sverdlov, imeni Kirov and imeni Ilich in Kalacheyevskiy Rayon, all of which have delivered approximately 70,000 tons of wheat and peas to the elevator. /by A. Katkalov/ /Text/ /Moscow SELSKAYA ZHIZN in Russian 27 Jul 85 p 1/ 7026

EMPHASIS ON QUALITY--Special attention is being given to the quality of the harvest operations at kolkhozes and sovkhoses in the central chernozem zone. The farm workers plan to sell not less than 110,000 tons of strong and valuable wheat to the state. This is a realistic task. Indeed, this year the grain crops are being grown on 500,000 hectares using the intensive technology. Special control is being exercised over the industrial tracts. The yields obtained from them are evaluated on the spot with representatives of the grain receiving enterprises. The batches of high quality grain thus formed are shipped by means of special motor vehicle columns to the granaries, where they are placed in storage in individual facilities. The best grain constitutes additional profit for the farms for the yields obtained. In the interest of supplementing the feed supplies, control must also be exercised over the straw and chaff losses. Fine experience has been accumulated in this regard in Belgorod Oblast. Here the combines are adjusted for milling the straw. It is immediately placed in tractor wagons and delivered to the farms. On the tracts thus cleared, loosening of the stubble and further tilling of the soil are started immediately. /Text/ /Moscow SOVETSKAYA ROSSIYA in Russian 3 Aug 85 p 1/ 7026

CARRION BEETLES--The dull carrion beetle will pose a particular danger to the young beets. This beetle has now been reported in barley and last year's beet areas. Infestation is reported to be running at the level of 2-3 beetles per square meter. [Excerpt] [Minsk SELSKAYA GAZETA in Russian 14 May 85 p 2] 8963

CSO: 1824/479

LIVESTOCK FEED PROCUREMENT

OFFICIALS DISCUSS FEED STORAGE TECHNOLOGY

Moscow SELSKAYA ZHIZN in Russian 16 Jul 85 p 2

[Article by V. Goncharov: "Feed in the Tower Silos"]

[Text] An all-union seminar-conference was convened in Brezhnev in the Tatarskaya ASSR dedicated to the introduction of industrial feed procurement technology and fodder storage using prefabricated concrete silos. Participants included chairmen and deputy chairmen of republic, kray and oblast "selkoz-tekhnika" associations for the supply of production equipment to agriculture, the republic deputy ministers of agriculture, chiefs of the oblast agricultural administrations, kolkhoz and sovkhoz managers, managers of structural assembly organizations and enterprises, scientists, designers and representatives of party and soviet organizations. The seminar-conference was opened by L. I. Khitrin, chairman of the USSR State Committee for Supply of Production Equipment to Agriculture.

Well-built cylinders almost 30 meters high, with their sparkling zinc coated domes, have become a familiar sight in the rural scenery. They are in the Brestskaya Oblast and Sakhalin, the Tatarskaya ASSR and the Ukraine... Thousands of kilometers separate these places, but everywhere where industrial technology is being utilized for the procurement and storage of fodder, the positive economic effect has been great.

On the Sakhalinskiy Sovkhoz "Komsomolets," 24 concrete silos have been built and cattle are provided with excellent feed the whole year round. The expenditures of grain fodder have been sharply cut here and the herd's productivity is up. At the Brestskiy Combine and State Farm "Mir," 40 vertical storage facilities allow for completely mechanized feeding. As a result, there has been a major decrease in labor expenditures and the cost of production has been markedly reduced.

Data from state experiments and production checks show an increase of 15-19 percent in cured hay entering silos, while labor costs for its preparation, piling, removal and distribution to animals is 2.4 to 3.2 times less than with trench-type storage facilities. Practice shows that the silos are better used where close cooperation firmly exists between a village's laborers and their partners in the agro-industrial complex. A good example of this is provided by the collectives of the Belorussian SSR State Committee for Supply of Production Equipment to Agriculture. Here they enjoy timely equipment

servicing on all silos, conduct their repair expeditiously and change worn out parts with more productive and reliable equipment. The republic uses more than 96 percent of its silos. The subdivisions of the Estonian State Committee for Supply of Production Equipment to Agriculture render great aid in the activation and utilization of silo storage facilities to the kolkhozes and sovkhozes. A specialized technical maintenance service operates here.

Those who spoke at the seminar underscored that the storage of cured hay in silos is a highly rated new technology to provide greater industrial efficiency and improved procurement and storage of fodder. Only strict technological discipline will guarantee high quality feed. These problems are being successfully resolved in the Tatarskaya ASSR where 500 silos have already been built and soon their number will rise by still 1,200 so that there will be one mechanized feed facility for every 200 cows. Harvesting and transportation work detachments of the association for supply of production equipment to agriculture are heaping cured hay in the autonomous republic's silos. Here's a remarkable fact. Equipped with only six percent of the feed harvesting combines, these detachments last year filled one-third of the silos.

Considerable experience in the effective use of fodder harvesting technology and cured hay silos has been amassed in the Gomelskaya Oblast. At the Kormyanskiy Rayon Association for Supply of Production Equipment to Agriculture, for example, farm workers using fodder reaping equipment in the seasonal harvest realized up to 8,200 tons of cured hay and 9,300 tons of silage, thereby lowering the cost of procurement by 3 to 4 times.

However, the introduction of industrial feed procurement technology often encounters stagnation and indifference. Due to a lack of fodder storage facilities, feed frequently spoils, and tower-type storehouses ready for use are sometimes empty. The powerful production and technical potential is used weakly at times. There are many instances in which farm managers and specialists crudely violate haylage technology and attempt to conceal their negligence by citing flaws that they say are characteristic of this technology. In Latvia, Moldavia and a number of oblasts in the Russian Federation, in the Ukraine and Kazakhstan, the "selkhoztekhnika" associations fail to carry out kolkhoz and sovkhoz requests for maintenance and silo repair and for replacement of worn out equipment. This approach to the matter acts as a brake to scientific and technical progress in feed production.

In recent years much has been done to improve the technical level and quality of silos, machinery and equipment used for haylage, like reinforced sturdiness and waterproofing. Since 1983 newly erected tower silos are being equipped with highly productive 3B-5.0. loaders, and, since 1984, with RRS-F-50-6 distributive unloaders. A major portion of this equipment is being used in exchange for obsolete equipment in earlier constructed tower silos. However, for 1986 only the Belorussian SSR Association for the Supply of Production Equipment to Agriculture has ordered the necessary devices and accessories necessary to complete this work. Apparently various managers are avoiding the technical reequipping of this branch in order to justify the low percentage use of these silos.

Concrete block tower silos are not only used to store cured hay. Production and construction of complex mechanized tower storehouses has been introduced for grain forage and food grain, feed granules, forage briquettes and mixed feed. These means of storage are cheaper and more economical than barns. Still another important trend in using prefabricated tower silos has become apparent--crushed ears of corn are stored with greater moisture. This method has been tested and adopted on farms in the Krymskaya, Dnepropetrovskaya and Nikolayevskaya oblasts. But its spread has been delayed by a lack of the necessary pulverizers and sometimes even by management inefficiency at a number of oblast and kray "selkhoztekhnika" associations.

V. K. Onisovets, deputy chief of the Agriculture and Food Industry Department of the USSR Communist Party Central Committee, spoke at the seminar-conference. K. N. Belyak, minister of the USSR Ministry of Machine Building for Animal Husbandry and Fodder Production, and V. S. Pilyuto, sector head of the Machine Building Department of the USSR Communist Party Central Committee, participated in the work of the conference.

8504

CSO: 1824/500

LIVESTOCK FEED PROCUREMENT

NORTH USSR FEED PROCUREMENT REVIEWED

PM221019 Moscow SELSKAYA ZHIZN in Russian 16 Aug 85 p 1

[Agricultural review by M. Glinka, animal technician: "Northern Haymaking"]

[Text] The latest results of the progress of feed procurement have been summed up. The USSR Central Statistical Administration has reported that as of 12 August throughout the country as a whole the plan for accumulating coarse and succulent feed had been fulfilled 44 percent. Some 6.96 quintals of feed units per standard head of livestock have been laid in.

The hot weather which has settled in a number of regions of the country has not deceived the crop farmer. They know that fall is not far away and they are seeking to bring in the harvest they have grown as rapidly as possible. Nature has left particularly little time for the farms in the north of our country. Yet to fulfill the plan for the procurement of succulent and coarse feed the kolkhozes and sovkhoses here must still cut tens of thousands of hectares of grass. The plan is geared to creating stocks of less than 16 quintals of feed units per standard head of livestock. This quantity is sufficient only for the herd's winter maintenance, not for increasing its productivity.

Here is how matters stand with the procurement of coarse and succulent feed in the northern oblasts and autonomous republics (in feed unit quintals):

| Oblasts | In percentage of plan | Per standard head of livestock |
|---------------|--------------------------|-----------------------------------|
| Arkhangelsk | 61 | 9.9 |
| Vologda | 68 | 10.4 |
| Murmansk | 24 | 2.3 |
| Karelian ASSR | 61 | 10.8 |
| Komi ASSR | 34 | 5.8 |

As we can see, the farms of Vologda Oblast are out ahead in fulfilling the plan. But it must be noted that this plan is not accelerated and only 15.3 quintals of feed units per head of livestock are needed to fulfill it.

The Vologda Oblast workers have become accustomed to bad weather and of all types of grass feed they have long preferred to lay in silage--perhaps the most "bad weather-resistant" feed. And this year they have already laid 1.79 million

metric tons of silage matter in the trenches and obtained 927,000 metric tons of the planned 1.46 million metric tons of ready silage. Unfortunately just 8 percent of succulent feed has been laid in using chemical preservatives, which is having a bad effect on quality.

The oblast's farms have overfulfilled the plan for laying in cured hay--its procurement also depends less on weather conditions than does that of hay. As for hay, a way out has been suggested by the machine operators of the "Aurora" sovkhos. SELSKAYA ZHIZN has already acquainted readers with this experience so I shall merely remind them briefly that the cut grass on this farm is aired in AVM [expansion unknown] units and the drying process is completed in barns with the aid of active ventilation.

Unfortunately, this method has not been widely disseminated in Vologda Oblast. In its place local leaders are propagandizing the so-called "trench hay" and recommend that it be laid down in small stacks. It is not surprising that 18 percent of the feed checked proved to be substandard, mainly because of its moisture content. It must be said that control over feed quality this year in the oblast has been badly organized and the quality of most of the hay, cured hay, and silage has not been established.

All the deadlines were passed long ago, but to this day Arkhangelsk Oblast has not cut even one-fourth of sown and natural grass. As a result only 77 percent of the planned quantity of hay and 70 percent of cured hay has been procured and only 46 percent of the planned quantity of silage has been obtained. And the weather is by no means to blame here. There was fine weather for 2 weeks in the oblast. There are sufficient manpower resources and equipment to cut about 20,000 hectares of grass a day. So there has been the time to harvest all 322,000 planned hectares of grass. But there was insufficient organization and resourcefulness. And the main thing was that many farms waited for "the grass to grow a little."

On the Karelian ASSR kolkhozes and sovkhoszes grass has been cut on only 76 percent of the areas. The hay procurement plan has been fulfilled 74 percent and the plan for laying in silage 24 percent. It must be said that the ASSR's farms have outlined the most stepped up plans in the region and their fulfillment will make it possible to lay in nearly 18 quintals of feed units per standard head of livestock.

Yu. I. Ollokaynen's mechanized detachment from the "Vilga" experimental farm is laying in feed in any weather. The machine operators, working to an integrated job schedule, are packing the hay into shortened bales, drying the bales under film, in unwallled towers, and in the lofts of stockraising premises equipped with ventilators. Unfortunately, far from all farms are using this experience.

A perturbing situation has taken shape in the Komi ASSR where nearly one-third of the grass has remained uncut and the plan for hay procurement has been fulfilled only 55 percent, the cured hay procurement plan has been fulfilled 63 percent, and the silage procurement plan 6 percent. Poor labor organization and the unsatisfactory use of equipment are aggravated by the poor meadow grass

yield. Many farms are failing to observe the procedure for hay procurement. Awnings and barns have not everywhere been prepared for active ventilation and a number of sovkhoses do not use ventilators or indeed pickup balers. Less than 10 percent of silage matter is treated with preservatives when it is laid down.

A special mention must be made of Murmansk Oblast. Although the plan for procurements of coarse and succulent feed has been fulfilled only 24 percent, you cannot criticize the Arctic arable farmers. They have done everything they could. Grass for hay and cured hay has been cut in the oblast over an area three times greater than planned and the target for cutting perennial grass has been fulfilled 164 percent. Many farms are even reckoning on a second cutting. But all this has still not been enough. After all, the farms here obtain most of their coarse feed from other oblasts. And they are in no hurry to help the northerners. Even the "Murmanskiy" sovkhos especially set up for the purpose in Saratov Oblast is disrupting hay deliveries. The leaders of this oblast and of Kaluga, Kalinin, Tula, and Novgorod Oblasts must render more effective aid to the Arctic farms.

CSO: 1824/554

LIVESTOCK FEED PROCUREMENT

FEED PROCUREMENT OVERVIEW INDICATES PROBLEM AREAS

Moscow SELSKAYA ZHIZN in Russian 26 Jul 85 p 1

[Article by M. Glinka, zootechnician: "Feed Value Based Upon Quality"]

[Text] Workers attached to the statistical organs estimate that the first cutting of natural and perennial grasses has been carried out on 55 million hectares -- 65 percent of the planned amount. Thirty eight million tons of hay have been placed in storage (49 percent), haylage -- approximately 47 million tons (74 percent), artificially dehydrated green feed -- 3.4 million tons (40 percent). The overall nutritional value of all feed procured amounts to 37,380 tons of feed units, or 27 percent of the plan. Approximately 4.31 quintals of feed units from coarse and succulent feed have been placed in storage per standard head of cattle.

The last two figures warrant attention. They reveal how much more remains to be done in order to realize a satisfactory wintering period for the livestock. Although the chief feed for the cattle and sheep is silage, in a majority of the country's regions they are only now beginning to store it in trenches (7.7 million tons of succulent feed have been obtained compared to the planned amount of 258.6 million tons) and the situation in the forage yards of a number of farms is arousing concern. Almost 2 months have already been given to procuring feed and yet the feed supplies in some republics do not exceed one third of the farm requirements. The table on the following page reveals the quantities of forage placed in storage in feed units as of 22 July 1985.

It is apparent that considerable differences exist in the matter of ensuring that the farms are supplied with feed, even in neighboring regions. It is easy to note that in a majority of the republics, excluding perhaps Moldavia, the planned quantities of coarse and succulent feed are not sufficient for ensuring a high productivity for the herd and this brings about an unjustified expenditure of concentrates. Particular importance is attached to conserving in the use of the feed and supplying the feeding troughs with as many nutrients as possible. And this work must be started now, during the summer months.

To protect the feed means to first of all protect each feed unit, each gram of protein and sugars and each milligram of carotene contained in the grasses

placed in storage for the winter. This can be achieved only by observing the optimum mowing periods, by making extensive use of progressive technologies and by carrying out these technologies in a strict manner. And by no means is everything proceeding smoothly in this area: a first cutting has still not been carried out on 40-60 percent of the grasses in Armenia and Georgia. The best periods for harvesting grasses are being overlooked in Voroshilovgrad and Kiev oblasts in the Ukraine, in Navoi and Khorezm oblasts in Uzbekistan and in Tashauz and Mary oblasts in Turkmenia.

| Republics | In Percentages of Plan | Quintals of Feed Units Per Standard Head |
|------------|------------------------|--|
| RSFSR | 24 | 3.76 |
| Ukraine | 22 | 3.59 |
| Belorussia | 51 | 6.87 |
| Uzbekistan | 28 | 4.74 |
| Kazakhstan | 26 | 4.30 |
| Georgia | 31 | 4.29 |
| Azerbaijan | 63 | 9.84 |
| Lithuania | 64 | 10.11 |
| Moldavia | 25 | 5.13 |
| Latvia | 50 | 7.83 |
| Kirghizia | 38 | 5.33 |
| Tajikistan | 53 | 7.15 |
| Armenia | 38 | 5.89 |
| Turkmenia | 38 | 5.09 |
| Estonia | 51 | 6.99 |

In all, only 11 percent of the silage placed in storage on Lithuanian farms was enriched with nitrogen-containing additives, while at the same time such additives were applied to two thirds of the bulk placed in storage in Belorussia and Estonia. It is known that nutrient losses decrease sharply when silage bulk is treated with preservatives. In Novgorod Oblast, they were applied to more than one half of the feed placed in storage for the winter and in Vologda Oblast -- less than 10 percent.

The Moldavian farmers handle their feed in a very thrifty manner. Here they decided to lay away up to one third of their hay in the form of grass chop, dried out in AVM units. This feed, intended primarily for replacement young stock, is prepared practically on every farm. It contains one and a half times more protein, 3.5 times more carbohydrates and almost eight times more carotene than that found in 1st class hay. This is why inter-farm enterprises for the raising of heifers are especially willing to prepare grass chop.

At the present time, special importance is being attached to employing the forced ventilation method for grasses -- during changeable and rainy weather, it can be the means for saving hay and for reducing feed losses sharply. This valuable method is being employed extensively in Leningrad Oblast, where almost 80 percent of the hay was prepared with the aid of artificial drying and also in Stavropol Kray and in Pskov, Kuybyshev and a number of other oblasts. It would seem that this experience should be embraced by the Amur farmers: a high

humidity and abundant precipitation from year to year prevents them from procuring good quality hay. However, here the forced ventilation method was employed for drying less than 2 percent of the grasses intended for hay. A preference was shown for placing approximately one third of the excessively damp bulk in trenches. It is not difficult to estimate that the oblasts has already lost not less than 20,000 tons of feed units because of such action. Unfortunately, this technology, which results in tremendous nutrient losses, continues to remain in use in Smolensk, Moscow, Kiev and a number of other oblasts.

State testing has shown that it is possible to increase the haylage yield by 15-19 percent by storing it in tower storehouses rather than in trenches. The Kuban farmers are convinced of this fact based upon experience, having already filled many dozens of such towers. More than one tenth of all of the haylage is stored in them. And yet in the Bashkir ASSR, on the farms of which many tower storehouses have been built, less than 1 percent of the haylage is being stored in them. More than one half of the towers on farms in Vitebsk and Mogilev oblasts are empty.

To protect the feed commencing in the summer -- means to procure only high quality forage. This task is not being carried out in all areas. Thus, in Issyk-Kul Oblast in Kirghizia, the proportion of 1st class haylage this year decreased compared to last year and amounts to only 66 percent. And the proportion of 1st class grass meal here -- only 12 percent of the overall amount. The quality of the feed in a number of rayons of republic subordination has turned out to be very low: haylage -- in Keminskiy, Chuyskiy and Panfilovskiy, hay -- in Kalininskiy and grass meal -- in Alamedinskiy Rayon. The quality of the grass meal on some farms in Belorussia is declining. During a period of 30 days of procurement work, the proportion of 1st class feed fell from 48 to 32 percent. And in Vitebsk, Minsk and Mogilev oblasts, only 13-16 percent of this feed was evaluated as being of the highest quality.

Losses can be reduced and the preservation of the feed improved only by making extensive use of progressive technologies for the procurement and storage of forage.

7026

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LIVESTOCK FEED PROCUREMENT

EFFECT OF FEED CONCENTRATES ON MILK OUTPUT

Moscow SELSKAYA ZHIZN in Russian 23 Jul 85 p 2

/Article by V. Bakanov, professor and doctor of agricultural sciences:
"Reducing the Consumption of Concentrates"/

/Text/ Each year the state allocates large quantities of forage grain and industrially produced plant products for the production of mixed feed for dairy cattle. Despite this fact however, the level of cow productivity on many farms still remains relatively low and milk production is increasing slowly and disproportionately to the quantity of concentrates being consumed.

The chief reason for the low return from the use of concentrates in milk production is now clear to all. It derives from the fact that they are being fed to cows in rations containing insufficient amounts of hay, silage, haylage and vegetables and fruit, that is, those feeds which must be produced in sufficient amounts by the farms themselves. Indeed it is no secret that during some years the cows in many zones are provided with 2-3 times less than the required amount of hay, their supplies of silage and haylage are incomplete and there is no point to even discussing vegetables and fruit. On a majority of the farms, they are excluded from the animal rations either partially or completely. Meanwhile, even with the partial replacement of these principal feeds by grain concentrates, the latter are being utilized by a cow organism not as a source of energy and protein for the production of additional milk. They have become a compensating means for maintaining the milk productivity of an animal at a previous and rather low level.

Both in our country and in foreign countries, many have become convinced that the supersaturation of feed rations for dairy cows with grain concentrates is not justified from either a physiological or economic standpoint. When more than 300-350 grams of concentrates per kilogram of milk are included in the rations for cows, the reproductive functions of the cows are usually disrupted and the periods for their economic use are shortened by a factor of 2-3.

When there is a stable number of cows on the farms, the further intensification of milk production with a reasonable savings in forage grain must be achieved by raising sharply the productivity of all of the feed lands and crops. This in turn can be accomplished by improving the lands and crops, raising the level of agricultural practice and also by applying organic and mineral fertilizers, particularly nitrogen fertilizer, to the fields and haying and pasture lands.

The latter must play a decisive role in the intensification of feed production. By way of offering proof, I would like to cite the results of instructive experiments carried out over a period of many years on an experimental farm of the Timiryazev Agricultural Academy.

Thus, in one variant of the experiments, 2.1 tons of nitrogen, against a background of phosphorus and potassium fertilizers, were applied additionally in behalf of forage crops over a period of 4 years. During this period the farm produced an average of 30 more tons of milk annually and at the same time it realized a savings of 22 tons of mixed feed. Each kilogram of nitrogen or ammonium nitrate applied in behalf of annual or perennial grasses, corn and other forage crops made it possible to produce 14 additional kilograms of milk, with a savings of 10 kilograms of concentrates. And the feeding of these 10 kilograms of concentrates to a milking herd of cows that is increasing in size is making it possible to obtain 21 more kilograms of milk. As a result, the overall economic effect realized from an application of a kilogram of nitrogen was equivalent to an increase of almost 35 kilograms of milk.

This is why the principal fertilizers must be applied on a regular basis to meadows and to forage crop sowings, with nitrogen top dressings being applied to them in a timely manner.

Raising the milk yields of cows and first heifers in a skillful manner is a well-known and well tested method for rapidly increasing the production of milk. Its essence consists of intense feeding of the animals during the last months of pregnancy and the first three months of lactation. Quite often, in the form of an "advance," additional feed is issued for the purpose of increasing the milk yields of the animals, but this feed is included in the principal ration with no consideration being given to its energy value or digestible protein content. Thus the effect of such additives on the dairy productivity of cows is manifested in different ways depending upon the feeding conditions. Rather instructive in this regard were the results of studies in which a determination was made as to the possible level for an increase in milk (4 percent fat content) realized from the feeding of 1 kilogram of additional feed.

| Feed | Ration, Protein Surplus (in summer) | Ration, Protein Deficit (in winter) |
|------------------|--|--|
| Corn grain | 3.00 | 1.40 |
| Barley grain | 2.67 | 1.45 |
| Sunflower cake | 1.57 | 2.28 |
| Cotton-seed cake | 2.46 | 6.00 |
| Bagasse, dry | 1.87 | 0.76 |
| Potatoes, tubers | 0.68 | 0.28 |
| Oat straw | 0.69 | 0.34 |
| Wheat straw | 0.50 | 0.20 |

This experiment revealed once again that during the summer period dairy cattle should ideally be fed, where it is possible to do so, only high energy feed containing the minimal amount of deficit protein and that during the

winter the rations are best balanced with the aid of protein concentrates. At Timiryazevka, studies carried out over a period of 20 years on the summer feeding of cows provided convincing proof that a considerable savings in the use of grain feeds is possible during this period. The specialists on a number of leading farms quickly mastered the results of the scientific works. Thus, at the Moscow Sergiyevskiy Sovkhoz, 330 grams of mixed feed per kilogram of milk were fed to cows pastured on irrigated cultivated pastures and the milk production by the herd of 300 cows amounted to approximately 523 tons during the pasture season.

After having reduced the consumption of mixed feed during the pasture season by a factor of 1.5, the sovkhos began obtaining from the same herd almost as much milk as was obtained when it was supplied with an abundant amount of concentrates. There is a rather simple explanation for this: after receiving raised dosages of mixed feed, the cows consumed less pasture feed and the surplus portion of the concentrates was used for compensating for the fodder not eaten by the animals and not for the additional production of milk.

The comprehensive scientific-economic experiments carried out on these pastures underscored the possibility of improving the summer feeding of dairy cattle, while realizing a considerable savings in the use of grain concentrates. In addition to the pasture grass, the supplying of the cows with an additional feeding of barley at the rate of 150 grams per kilogram of milk ensured stable milk yields during the pasture period on the order of 14-17 kilograms daily and an increase in live weight on the order of 203-263 grams daily. But when the barley in the ration was replaced by the same amount of standard mixed feed, their milk yields during the same pasture period declined by 10-11 percent.

An even greater savings in barley can be achieved during the summer by substituting feed syrup for a portion of it (200 grams daily per cow) or 2-3 kilograms of oats or barley cuttings, seasoned by a solution of the same syrup. By feeding a cow 220 kilograms of flavored straw cuttings during the pasture season, the sovkhos realized a savings of up to 80 kilograms of barley, with no harm being inflicted upon the milk productivity and with the fat content of the milk even increasing. As a result, the additional profit per cow during the pasture period increased during these production experiments by 32 rubles.

In order to reduce labor expenditures associated with providing the cows with an additional feeding during the summer, use should ideally be made of briquetted or loose mixed feed. For daily milk yields of 10-15 kilograms, the structure of such additional feedings should include: barley -- 48 percent, straw cuttings -- 46.5, syrup -- 4 and salt -- 1.4 percent. In addition to green feed, which the animals are supplied with to their heart's content, the cows are also provided with 3-4 kilograms of mixed feed daily during milking. A kilogram of such mixed feed contains 0.7 kilograms of feed units and 66 grams of digestible protein. Cows providing daily milk yields of 16-20 kilograms are fed the same amount or slightly more mixed feed containing 57 percent barley, 34.5 percent straw cuttings, 5 percent syrup, 2 percent feed phosphate and 1.5 percent salt. A kilogram of such feed contains 0.8 feed units and 56 grams of digestible protein.

On large farms, the summer mixed feed for dairy cattle should ideally be prepared in the feed preparation shops of farms or at RAPO /rayon agroindustrial association/ plants. This makes it possible to reduce grain consumption under summer conditions and to use straw to greater advantage.

With regard to the present system for supplying grain concentrates, it can be said that many farms are still not displaying proper interest in realizing economies in the use of such concentrates. Hence there is a great over-expenditure of this irreplaceable energy and protein raw material. The interests of the work demand that the leaders, specialists and all livestock breeders display greater responsibility for improving the utilization of grain concentrates. In order to achieve this goal, use must be made of the same economic and other types of measures which have been introduced into operations recently in the interest of ensuring thrifty consumption, for example, of liquid fuel and other resources. And forage grain and mixed feed are equally important products. This is the chief raw material base for animal husbandry.

7026

CSO: 1824/497

LIVESTOCK

FIRST HALF-YEAR ESTONIAN LIVESTOCK PRODUCTIVITY REVIEW

Tallinn SOVETSKAYA ESTONIYA in Russian 19 Jul 85 p 3

/Article: "To Surpass Results Already Achieved"

/Text/ The first 6 months produce many concerns for our field crop growers. The cool weather and frequent rainfall did not favor the growth of the field crops but rather they complicated the operations.

Difficulties arose in connection with feed procurements. And although the first cutting is nearing completion, the supplies of hay and haylage on the farms have still not reached the planned figures.

July is a decisive month for the haying campaign. This year the grass yields are not of the best and thus a second and a third cutting must be carried out on areas as large as possible.

By 1 July the production of meat at the kolkhozes and sovkhoses had increased by 1 and milk by 3 percent compared to the same period for last year. These indicators are not satisfactory. Moreover, the numbers of livestock decreased by 3-7 percent in Khaapsaluskiy, Yygevaskiy, Kingiseppskiy, Kokhtla-Yarveskiy and Paydeskiy rayons.

Since the beginning of the year, the average milk yield per cow has been 2,046 kilograms -- 74 kilograms higher than the figure for last year. The milk yields have increased in all rayons with the exception of Khiyumaaskiy (-24 kg). The highest increases were recorded in Kharyuskiy, Valgaskiy and Tartuskiy rayons (167, 109 and 106 kilograms respectively). The achievements of the workers in Kharyuskiy Rayon are worthy of note. Here a maximum amount of attention was given to those farms where last year the milk yield per cow did not exceed 3,500 kilograms. In June the milk yield per cow in Kharyuskiy Rayon amounted to 415 kilograms, or 28 kilograms more than the June indicator for last year. The milk yields for June increased in all of the rayons, with the republic average being 402 kilograms (15 kilograms more than in 1984). These were unprecedented milk yields for the republic. Every attempt is being made at the present time to consolidate this success.

However, we are still encountering insufficiently cut grazing areas, empty containers at watering places and instances of the herd not remaining out on the grazing areas overnight. For example, how does one explain the fact that

Milk Purchases and Cow Productivity During January - June 1985

| | | (2) Закуплено молока во всех категориях хозяйств -- в % к | | | |
|---------------|------------------|---|---|---|--|
| Районы (1) | | плану I полу- годия | соответст- вующему периоду 1984 г. | Средний удой моло- ка от одной коровы в колхозах и совхозах -- кг | ± кг к соот- ветствующе- му периоду 1984 г. |
| | | (3) | (4) | (5) | (6) |
| (7) | Харьуский | 106 | 106 | 2172 | +167 |
| (8) | Валгаский | 105 | 104 | 1818 | +109 |
| (9) | Тартуский | 104 | 104 | 1991 | +106 |
| (10) | Пайдеский | 103 | 103 | 2180 | + 87 |
| (11) | Пылваский | 103 | 103 | 1973 | + 81 |
| (12) | Вильяндский | 103 | 102 | 2068 | + 77 |
| (13) | Йыгеваский | 103 | 102 | 1983 | + 54 |
| (14) | Кокхтла-Ярвеский | 102 | 102 | 1964 | + 55 |
| (15) | Раплаский | 102 | 101 | 2000 | + 36 |
| (16) | Вырусский | 101 | 100,6 | 1965 | + 60 |
| (17) | Пярнуский | 101 | 101 | 2142 | + 64 |
| (18) | Раквереский | 101 | 100,7 | 2207 | + 44 |
| (19) | Хаапсалуский | 100,9 | 100,3 | 1908 | + 32 |
| (20) | Кингисепский | 99 | 98 | 1895 | + 13 |
| (21) | Хийумааский | 92 | 96 | 1772 | - 24 |

Key:

- | | |
|---|-----------------------|
| 1. Rayons | 10. Paydeskiy |
| 2. Milk purchased at all categories of farms -- in % of: | 11. Pylvaskiy |
| 3. Plan for 1st 6 months | 12. Vil'yandiskiy |
| 4. Corresponding period for 1984 | 13. Yygevaskiy |
| 5. Average milk yield per cow at kolkhozes and sovkhoses, in kg | 14. Kokhtla-Yarveskiy |
| 6. ± kg, compared to corresponding period for 1984 | 15. Raplaskiy |
| 7. Kharyuskiy | 16. Vyruskiy |
| 8. Valgaskiy | 17. Pyarnuskiy |
| 9. Tartuskiy | 18. Rakvereskiy |
| | 19. Khaalsaluskiy |
| | 20. Kingiseppskiy |
| | 21. Khiyumaaskiy |

over a period of 6 months the milk yield per cow at the Lungu Sovkhoz was only 1,247 and at the Takhe Sovkhoz -- 1,373 kilograms? The entire republic is striving to obtain milk yields of 4,000 kilograms and here they are barely achieving 3,000. The party organizations on these farms and the Raplaskiy and Valgaskiy RAPO's /rayon agroindustrial association/ must undertake urgent measures aimed at ensuring that the milk yields on the farms fall no lower than 3,000 kilograms.

The grasses continue to grow at the present time. Their correct use will make it possible to achieve high yields.

On 1 July the republic's farms sold livestock and poultry and also milk at a rate that was 2 percent more than the figures for last year and eggs -- 0.9 percent less. The 6 month task for livestock procurements was fulfilled by 105 percent, for milk procurements -- by 102 percent and eggs -- by 103 percent.

The livestock breeders in Tartuskiy, Kingiseppskiy, Khiyumaaskiy and Khaapsaluskiy rayons coped with their livestock procurement obligations better than others. And although all of the rayons fulfilled the plan, the workers

workers in Kharyuskiy, Paydeskiy, Rakverskiy and Valgaskiy rayons sold less livestock to the state than they did during the first 6 months of last year.

Meat Purchases and Average Daily Weight Increases in Livestock During Fattening (January - June 1985)

| (2) | Районы (1) | (2) | | (5) | | (8) | |
|-----|-----------------|--|--|--|---------------|--------------------------------------|---------------|
| | | Закуплено скота и пти- цы во всех категориях хозяйств — в % к | Средний вес закупленного скота — кг | Средне- суточный прирост ско- та на откорм- е в колхоз- ах и сов- хозах — граммов | | | |
| | | плану 1 полу- годия (3) | соответ- ствующему периоду 1984 г. (4) | крупного рогатого скота (6) | свиней (7) | крупного рогатого скота (6) | свиней (7) |
| 1 | Тартуский | 113 | 110 | 443 | 115 | 620 | 474 |
| 2 | Кингисеппский | 110 | 110 | 441 | 101 | 612 | 480 |
| 3 | Хийумааский | 109 | 108 | 461 | 105 | 737 | 473 |
| 4 | Хаапсалуский | 109 | 102 | 455 | 109 | 619 | 468 |
| 5 | Вильяндский | 109 | 105 | 451 | 114 | 656 | 526 |
| 6 | Пылваский | 106 | 104 | 436 | 112 | 668 | 475 |
| 7 | Раплаский | 105 | 99,2 | 459 | 109 | 683 | 479 |
| 8 | Йыгеваский | 105 | 103 | 449 | 107 | 614 | 473 |
| 9 | Пярнуский | 104 | 102 | 443 | 103 | 625 | 510 |
| 10 | Харьюский | 104 | 97 | 455 | 104 | 629 | 500 |
| 11 | Валгаский | 102 | 96 | 436 | 114 | 650 | 472 |
| 12 | Вырусский | 102 | 100,5 | 435 | 123 | 628 | 482 |
| 13 | Пайдеский | 102 | 97 | 456 | 101 | 644 | 475 |
| 14 | Раквереский | 100,9 | 98 | 478 | 110 | 664 | 455 |
| 15 | Коктла-Ярваский | 100,7 | 106 | 455 | 117 | 664 | 488 |

Key:

- | | |
|---|-----------------------|
| 1. Rayons | 11. Khiyumaaskiy |
| 2. Livestock and poultry purchased at all categories of farms, in % of: | 12. Khaapsaluskiy |
| 3. Plan for 1st 6 months | 13. Vilyandiskiy |
| 4. Corresponding period for 1984 | 14. Pylvaskiy |
| 5. Average weight of livestock purchased, in kg | 15. Raplaskiy |
| 6. Cattle | 16. Yygevaskiy |
| 7. Hogs | 17. Pyarnuskiy |
| 8. Average daily weight increase in livestock during fattening at kolkhozes and sovkhoses, in grams | 18. Kharyuskiy |
| 9. Tartuskiy | 19. Valgaskiy |
| 10. Kingiseppskiy | 20. Vyruskiy |
| | 21. Paydeskiy |
| | 22. Rakverskiy |
| | 23. Kokhtla-Yarveskiy |

The livestock are sold in a fine state of nourishment. The average weight of the cattle was 451 kilograms. This was the best indicator for all of the years. But this was not the limit. In Rakvereskiy Rayon, for example, the weight of fattened cattle was 478 kilograms. On the other hand, it was only 435 kilograms in Vyruskiy Rayon. The average sales weight for the hogs was high -- 110 kilograms. For the Vyruskiy Rayon livestock breeders, this indicator was 123 kilograms. And in Kingiseppskiy and Paydeskiy rayons -- 101 kilograms.

The plan for the sale of livestock and poultry was not fulfilled by 17 farms. In Paydeskiy and Valgaskiy rayons -- by 6 farms. Included among them were the sovkhoses Koeru, Taagepere and Karula, the Tyuri Model Sovkhoz-Technical School,

the kolkhozes imeni Lyakhova, Khellenurme, Kirna and Imavere and even the Estoniya Kolkhoz. Beyond any doubt, these farms will cope with their annual tasks, but the plan should be carried out in a rhythmic manner.

Although the 6 month task for livestock and poultry procurements was fulfilled, the goals called for in the Food Program have not been achieved by the republic's livestock breeders. All of the rayons, with the exception of Khiyumaaskiy and Kingiseppskiy, coped with their 6 month task for milk sales. The livestock breeders in Kharyuskiy, Tartuskiy and Valgaskiy rayons performed most successfully. At the same time, of 300 farms having plans for selling milk to the state, 24 did not fulfill them and in Khiyumasskiy Rayon the plan was fulfilled only by the Kyrgessaare Kolkhoz. The plan was not fulfilled by the sovkhoses Karya, Iysaku, the Tyuri Model Sovkhoz-Technical School, the kolkhozes Mukhu, Kaarma, Orissaare, Utna and Viru. The plan is law. And this year all of the conditions are available for successful milk production; it is only necessary to raise plan discipline.

Quite naturally, a plan is ensured by the number of livestock and by an appropriate feed base. Unfortunately, on 1 July there were fewer cattle on the farms than was the case last year, including cows -- by 1 percent and hogs -- also by 1 percent. In particular, the number of cattle declined in Kokhtla-Yarveskiy, Tartuskiy and Vyruskiy rayons and hogs -- in Yygevaskiy, Pylvaskiy and Tartuskiy rayons.

It bears mentioning that the farms have attempted to correct this situation in recent months. Thus there has been more mating of cows and heifers and also hogs this year compared to last year. At the same time, this indicator declined in Khiyumaaskiy, Kingiseppskiy and Paydeskiy rayons. This is an alarming signal and one which warrants strict attention.

Compared to several years ago when the population manifested considerable interest in maintaining livestock on private plots, at the present time such interest has declined. This year, 4 percent fewer young pigs were sold to the population than was the case last year. This trend must be corrected, particularly in view of the fact that the purchase prices are advantageous to those individuals who raise livestock.

In order to cope successfully with the tasks of the five-year plan and to prepare worthily for the 27th CPSU Congress, more efficient work must be carried out during the second 6 month period and the results already achieved must be surpassed.

7026

CSO: 1824/508

REGIONAL DEVELOPMENT

FOOD PROGRAM IMPLEMENTATION SUBJECT OF NOVOSIBIRSK CONFERENCE

Sverdlovsk URALSKIYE NIVY in Russian No 6, Jun 85 pp 2-5

Article: "New and Leading Developments for Production!"

Text In March, a conference was held in Novosibirsk for the ministers of agriculture of autonomous republics and for the chiefs of the agricultural administrations of kray executive committees and oblast executive committees for the Urals, western Siberian, eastern Siberian and Far Eastern regions, during which discussions took place on the problem of introducing scientific achievements and leading experience into production operations, as a decisive trend to be pursued for implementing the Food Program.

The principal report was delivered by the Minister of Agriculture for the Russian Federation V.P. Nikonov. A summary of his report is published below. Other materials concerned with this conference will be published in future issues of the journal.

Twenty years have elapsed since the March (1965) Plenum of the CPSU Central Committee. During this period, the branch's fixed productive capital has increased by more than fourfold and the power-worker ratio of kolkhozes and sovkhozes has been raised by almost fourfold. Mineral fertilizer deliveries to the farms increased by roughly 10 million tons, a sharp increase took place in the volumes of work carried out in connection with improving the soil of solonetz and acid lands and the area of reclaimed lands increased twofold. All of this promoted a situation wherein the gross agricultural output increased by a factor of almost 1.5 during the 1964-1984 period.

A great deal was accomplished during this period directed towards improving the living conditions of the agricultural workers. Over the past 20 years, the housing fund in the rural areas increased by more than 160 million square meters (taking into account private construction). The spaces available in schools and pre-school institutes increased by more than 8 million and for clubs and palaces of culture -- by more than 4 million. The network of enterprises and institutes for providing communal, trade and medical services for the population was expanded substantially.

Especially noticeable are the positive changes which have taken place since the May (1982) Plenum of the Central Committee. In all, during the 2 years which

elapsed, the average annual volume of gross agricultural output in the RSFSR increased by 11 percent compared to the preceding period. Increases took place in the production of meat, milk, eggs, sugar beets, potatoes, vegetables and other products. Over the past 2 years, the republic has been fulfilling and over-fulfilling its plans for selling the principal types of livestock husbandry products to the state. Our farm economies have been strengthened appreciably. During this period, they earned 18.6 billion rubles worth of profits, whereas during the previous 2 years they operated at a loss. Mention must necessarily be made of the fact that during 3 years of this current five-year plan the flow of the rural population into cities decreased by almost one fourth.

All of this serves to indicate that definite positive tendencies are being noted in the development of agricultural production and in solving the social problems of the rural areas. However, they can be viewed only as being the first step towards solving the complicated and responsible tasks associated with the Food Program.

At the present time, the Urals, western and eastern Siberia and the Far East are already producing one third of the gross agricultural output of the Russian Federation and thus they are making a worthy contribution towards carrying out the republic's Food Program. The kolkhozes and sovkhoses in Tyumen, Tomsk, Kamchatka, Magadan and Sakhalin oblasts and in the Tuva and Yakut autonomous republics successfully fulfilled their plans for 4 years of the five-year plan for the sale to the state of the principal types of livestock husbandry products.

At the same time, the level achieved in the production of agricultural products in the oblasts, krais and autonomous republics of the Urals, western Siberian, eastern Siberian and Far Eastern regions is not satisfactory.

Beyond any doubt, the production results have been affected by the unfavorable weather conditions experienced over a number of years. Nevertheless, the chief cause of weak work on the part of a number of kolkhozes and sovkhoses has been the low level of farming management.

In particular, very poor work has been carried out in connection with the production and procurements of grain from durum and strong wheats, pulse crops and also millet and buckwheat. Not one oblast, krai or autonomous republic in the Urals or western Siberian regions fulfilled their plans for durum wheat grain procurements during the 10th Five-Year Plan, nor did they perform any better during 4 years of the 11th Five-Year Plan. A similar situation prevails in the case of fulfillment of the plan for pulse crop procurements.

Serious problems remain to be solved in livestock husbandry. The plans for 4 years of the five-year plan, for livestock and poultry deliveries, were not carried out in Kurgan, Orenburg, Chelyabinsk, Novosibirsk, Omsk, Irkutsk, Chita or Amur oblasts, in the Altay, Krasnoyarsk or Maritime krais or in the Bashkir or Buryat ASSR's; for milk deliveries -- in Kurgan, Chelyabinsk, Novosibirsk, Omsk, Irkutsk, Chita or Amur oblasts or in Krasnoyarsk, the Maritime of Khabarovskiy krais. The shortfall to the state amounted to more than 500,000 tons of meat and 800,000 tons of milk. Again this year, an alarming situation is developing in connection with the production and procurements of milk.

The principal causes of non-fulfillment of the plans for selling livestock husbandry products to the state include low operational indicators of the kolkhozes and sovkhoses in connection with reproduction of the herd and the productivity of the animals and large livestock losses caused by disease. Is it really possible to tolerate a situation wherein, on farms in Chita Oblast and in the Yakut and Buryat ASSR's, the milk yields per cow range from 1,500 to 1,700 kilograms and in Amur, Kurgan and Irkutsk oblasts and in the Maritime Kray -- 1,900-2,000 kilograms? The average daily increases in cattle weight during fattening amount to 360-370 grams in Chita, Amur, Sakhalin and Tyumen oblasts and the weight increases in hogs range from 240 to 310 grams in Orenburg and Amur oblasts and in the Altay and Maritime krays.

In short, a great amount of difficult work remains to be carried out. Moreover, it must be carried out in a systematic and objective manner, so as to ensure that agriculture in the eastern regions will begin to perform more reliably and more effectively than is the case today.

Among the complex of problems associated with solving these complicated tasks, attention should be given to some of the more important problems requiring complete and immediate resolution.

Stability of Leading Personnel and the Labor Collectives

Life has shown that an indispensable condition for creating hard working labor collectives is that of stability among the cadres of leaders. Last year, throughout the republic as a whole, a length of service at the same farm of less than 5 years was characteristic of 59 percent of the sovkhos directors and 55 percent of the kolkhoz chairmen; more than 10 years -- 16 and 23 percent respectively. In the eastern oblasts, krays and autonomous republics the situation is no better and in many of them it is even worse.

The situation with regard to the retention of middle echelon leaders is arousing considerable concern, despite the fact that each individual is aware of his importance to our agricultural production. Just as throughout the Russian Federation as a whole, so also in the mentioned regions, more than 60 percent of these workers are working in a given post at the same farm for less than 5 years. In Tomsk Oblast, their proportion is even higher -- 74 percent, in the Buryat ASSR, the Maritime Kray and Amur Oblast -- 70 and in the Yakut ASSR -- 77 percent. Frankly speaking, this serves to indicate that a very alarming situation has developed in one of the most important sectors of our work. Certainly, it is possible to justify this on the basis of certain objective and subjective factors. But regardless of the reasons cited, the chief one has to be failure to devote sufficient attention to this problem and to the entire complex of questions associated with solving it.

It should be mentioned once again that all of our work directed towards creating stable labor collectives must commence first of all with a skilful and well thought out selection of farm leaders. A high level of exactingness towards these personnel must be combined with concern for them and at no time should control tend to paralyze their initiative and independence. And certainly we must make more active use of one particular type of training for leaders, especially young ones, that has proven its worth -- probationary training for them at leading kolkhozes and sovkhoses under the direction of experienced directors or chairmen.

Improving the Forms for Labor Organization and Wages

Based upon the example set by many of the leading farms, we are once again convinced that the chief path to be followed for raising the return from the potential created in the rural areas is that of introducing the collective contract into operations in all areas. We have accumulated considerable experience in this work. Last year, more than 57,000 non-schedule collectives were engaged in farming and they worked more than 66 million hectares of arable land, or more than one half of the overall area of such land. An increase has taken place in the trend directed towards assigning them not individual crops but rather crop rotation plans. At the present time, one out of every two teams or brigades operating on the basis of a collective contract is providing complete services for crop rotation plans.

The advantages of a collective contract in farming are obvious: a worker assigned to a non-schedule team (compared to a conventional subunit) is accountable for grain, forage and vegetable crop areas that are three times larger and in the case of potatoes -- seven times larger.

The collective contract entered into widespread use in livestock husbandry commencing in 1983 and today it is being used by more than 68,000 farms, brigades and teams. This is roughly 36 percent of their overall number. They service almost one fifth of the cattle during maturing and fattening, 16 percent of the cows, 26 percent of the hogs, 66 percent of the sheep and 42 percent of the poultry. In subunits which operate on the basis of a collective contract (compared to other subunits), the livestock and poultry workload per worker is considerably higher: often by 30-40 percent.

The collective contract is being introduced actively into operations in farming and livestock husbandry at kolkhozes and sovkhozes in Novosibirsk, Tomsk, Chelyabinsk and Chita oblasts and in Khabarovsk Kray. In these areas, such collectives work 50-70 percent of the arable land and service up to 40 percent of the livestock.

Diverse and in all instances valuable experience in the use of the collective contract has been accumulated in various branches of production. In the Bashkir ASSR, for example, high operational indicators have been achieved by the team headed by Hero of Socialist Labor Comrade Yevchenko of the Meleuzovskiy Sovkhoz. It is realizing a daily weight gain during the fattening of cattle of 940 grams, with labor expenditures per quintal of product amounting to 8.44 man-hours and production costs per quintal -- 132 rubles.

The questions concerned with introduction of the collective contract are becoming more and more the subject of thorough and business-like discussion, with various approaches being revealed for solving this problem. Nevertheless, we have outlined rather clearly the chief requirement for carrying out this work: there is not and there cannot be a collective contract in the absence of cost accounting, nor can there be cost accounting in the absence of a check form of control. We consider this requirement to be very firm.

And if we evaluate today the work concerned with introducing the collective contract from this standpoint, then it should be stated directly that we are still not seeing much order in the carrying out of this work. Throughout the

Russian Federation as a whole, cost accounting has been introduced into operations at 16,000 farms or 71 percent of their overall number. At first glance, it would seem that this figure is not all that bad. However, cost accounting has been introduced at only 32 percent of the farms in eastern Siberia and in the Far East region -- at 47 percent of the farms. But even in those areas where this indicator is considerably higher, there still is no basis for discussing successful work associated with the introduction of the collective contract.

Let us take the Bashkir ASSR. Cost accounting has been introduced into operations here at 93 percent of the farms and yet the check form of control is in use at only three farms, in the Altay Kray the figures are 89 percent and 21 farms respectively and in Khabarovsk Kray -- 86 percent and 1 farm.

This gives rise to a question: is cost accounting considered to have been introduced at those farms where the check form of control is not in use? I do not think so. Nor is it simply a matter of accounting, but rather under the check form of control the members of non-schedule collectives monitor their own expenditures. Moreover, the check form of control is very accessible and clear.

Direct control is exercised here and each worker is firmly aware that he will receive additional compensation for any savings in resources, that is, he is directly interested in thrift and economies.

The vast amount of operational experience accumulated by the contractual collectives makes it possible to draw the fully justified conclusion that this progressive form for labor organization and wages can be employed successfully in all branches of livestock husbandry. The introduction of the collective contract into sheep raising, swine husbandry, for the fattening and raising of cattle and also in poultry raising does not pose any great difficulties. Poor work in the organization of a contract in these branches can be explained only on the basis of insufficient activity on the part of individual farm leaders and specialists and agricultural organs.

If you please, the greatest difficulties are encountered when converting dairy livestock husbandry workers over to the collective contract. The most effective form of labor organization for milk production is the brigade-team method, in which the milkmaids are assembled together in teams attached to brigades. However, each such team is given an individual assignment of cows and maintains a separate accounting for milk yield.

The experience of leading farms has shown that the collective contract is introduced most successfully in those instances where the structure of such collectives includes leading workers and specialists and their earnings are also directly dependent upon the operational results of the brigades and farms. An urgent need obviously exists for solving this problem at all of the kolkhozes and sovkhozes. Positive experience must not be allowed to lie around in the manner of dead capital, but rather it must be used in behalf of all farms and be adopted by them. In each oblast there must be a base rayon for accomplishing this and in each rayon -- a base farm.

Development of Economic Thought and Improvements in Production Administration

During the All-Union Conference on Economic Problems of the Agroindustrial Complex, emphasis was placed upon the fact that by no means have all of the leading personnel mastered the economic methods of management. As a result, these economic leaders often overlook such questions as a correct ratio between growth in labor productivity and wages, return on investments, the use of and turnover rate for capital, the quality and preservation of the products. In short, the economic thought of a portion of the leaders and specialists bears the imprint of old methods and managerial forms.

This is borne out by the economic indicators of many kolkhozes and sovkhoses in Kurgan and Orenburg oblasts and in the Altay and Maritime krais, where the wages increase considerably more rapidly than labor productivity. Thus it is obvious why last year, compared to 1983, the number of unprofitable farms in Kurgan Oblast increased by a factor of 2.1, in Orenburg Oblast -- by fourfold, with the total amount of losses in these oblasts increasing during the period mentioned by factors of 3 and 6 respectively.

Many examples could be cited showing how the wages for the same category of workers fluctuate sharply in neighboring oblasts, despite the fact that the working conditions are relatively the same. Thus, in 1983, one milkmaid in Omsk Oblast produced an average of 66.6 tons of milk and in Tomsk Oblast -- 67.4 tons. The average monthly wage for the milkmaids in these oblasts was 209 and 291 rubles respectively, or 38 and 52 rubles per ton of milk.

Moreover, large differences exist even in the same oblast. Naturally, the production costs for the milk and the economics of dairy cattle husbandry will differ here. We also encounter such negative phenomena in the field crop husbandry branch.

The all-round mechanization of production operations has a direct bearing on strengthening the kolkhoz and sovkhos economies.

Over the past 3 years, the increase in the level of all-round mechanization has made it possible to raise the workload per principal worker engaged in livestock husbandry by 15 percent and, notwithstanding an increase in the numbers of livestock and poultry, to achieve a labor savings on the order of almost 150,000 average annual workers and on the whole to reduce the number of milkmaids in the republic by 60,000.

The following examples testify to the effectiveness of this work. At the Mitrofanovskiy Sovkhoz in Chelyabinsk Oblast, as a result of modernization of a dairy farm and improvements in production organization, the direct labor expenditures for obtaining 1 quintal of milk were reduced to 4.1 man-hours, one farm worker became responsible for an average of 25 cows and one machine milking operator -- for 65 cows. At the Polovinnyy Sovkhoz in this same oblast, the modernization of a farm made it possible to increase its productive capabilities by 20 percent. Moreover, the labor expenditures per quintal of milk amounted to 4.5 man-hours and the production expenditures were reimbursed within the course of a year's time.

At the same time, serious shortcomings are apparent in the carrying out of this work. Over a period of 10 years, the level of all-round mechanization on cattle and dairy farms increased on the whole throughout the republic from 23 to 54 and from 36 to 71 percent.

Just as in the past, a very urgent problem continues to be that of issuing feed on cattle farms. The level of mechanization of this work in Russia is still only 55 percent. Its level is even lower in Irkutsk Oblast -- 33 percent, in Chita Oblast -- 28 and in the Buryat and Yakut ASSR's -- 32 and 4 percent respectively.

There is still one other great shortcoming in the carrying out of this work: at a large number of kolkhozes and sovkhoses, an increase in the level of mechanization is not being accompanied by a review of the livestock workload norms for the livestock husbandry workers. And this is having a very adverse effect on the branch's economy.

Here we have mentioned only individual and more typical shortcomings in the organization of production, which adversely affect the economy. These shortcomings may differ in each specific instance and in order to correct our economic indicators we must thoroughly analyze the status of affairs at each kolkhoz and sovkhos and in all of the production sectors. And this must be of concern not only to the economic service, which is directly responsible for it, but also to the leaders and specialists of the farms and agricultural organs. Any technology and any production process must necessarily commence with an economic calculation of how much will be expended and what these expenditures will return to the farm.

Raising the Fertility of Soils and Mastering Intensive Technologies for the Cultivation of Agricultural Crops.

Here I would like to discuss several questions which have a bearing on the results of our endeavors.

First of all, work with the land. The complicated tasks concerned with increasing the production of grain, feed and livestock husbandry products require systematic and well thought out work on the part of the kolkhozes, sovkhoses and all agricultural organs in the matter of improving soil fertility. For it is on this basis that we can successfully carry out all other measures concerned with production intensification.

For the eastern regions of the republic, the number one task is that of improving the fertility of the soil: many soils require chemical reclamation and also hydromelioration. A considerable portion of the land has low natural fertility.

In the work of improving the fertility of land, special attention must be given to increasing the production of organic fertilizers and their applications to the soil. It bears mentioning that this is a very urgent problem and that it is not being resolved in a satisfactory manner.

In the zone of the southern Urals and for the purpose of creating a self-supporting humus balance, an average of 7.6 tons of organic fertilizer should be

applied per hectare of arable land, in western Siberia -- 5.9, eastern Siberia -- 4.5 and in the Far East -- 7.1 tons. The actual amounts being applied are less by a factor of 2-2.5 and in eastern Siberia -- less by a factor of 3.

On many farms in the southern Urals and Siberia, the yield in farmyard manure makes it possible to satisfy the organic fertilizer requirements by only 40-50 percent. Certainly, there is no simple approach for solving this problem. The task of augmenting the supplies of organic fertilizer must be carried out in several directions.

In a number of oblasts (Tyumen, Tomsk, Omsk, Kamchatka and Sakhalin), where there are considerable supplies of peat, the peat procurements should be increased in a planned manner and the preparation of peat-manure composts should be organized on an extensive scale.

But such opportunities are not available in all areas and today it is absolutely clear that in a number of oblasts and krais it is impossible to solve the problem of creating a self-supporting humus balance in soils if genuine concern is not displayed for the cultivation of green-manure crops. Positive experience in the cultivation of these crops has been accumulated in the Altay Kray and it must be disseminated in a more rapid manner.

Considerable improvements are required in the quality of the organic fertilizers. Here there is only one method -- the construction of farmyard manure storehouses and sites for the preparation of composts. Meanwhile, the task of the republic's Sovmin /Council of Ministers/, with regard to the construction of these installations is being carried out very slowly. During 4 years of the current five-year plan, it was fulfilled by only 1 percent in Orenburg Oblast and in the Altay and Krasnoyarsk krais and generally speaking no such construction was started in Kurgan and Omsk oblasts or in the Maritime and Khabarovsk krais. Under conditions involving a critical shortage of organic fertilizers, such an approach to working with the land warrants very stern and strict criticism.

We have discussed extensively the schedules for applying organic fertilizers to the soil and how important this is with regard to the effectiveness of such fertilizers. But even here we are still not realizing improvements. Whereas on farms in Kurgan, Orenburg and Omsk oblasts and in the Altay Kray, 40-70 percent of the farmyard manure and composts were applied during the plowing of fallow last year (and again in small amounts), in the Tuva ASSR, the Maritime Kray and Tyumen Oblast less than 15 percent of the overall amount of organic fertilizer was used on fallow fields.

A great amount of work remains to be carried out in connection with raising the effectiveness of mineral fertilizers.

We must display very objective concern for expanding the volumes of all-round agrochemical improvements in soils. The experience available at many kolkhozes and sovkhoses in Siberia, the southern Urals and the Far East in the carrying out of this work underscores the great prospects for its use and the advisability of its introduction.

However, in a majority of oblasts and also in the Buryat and Tuva ASSR's, even small tasks associated with the carrying out of all-round agrochemical

improvements in fields are not being carried out. For example, the 1984 task in Kemerovo Oblast was carried out by only 36 percent, Omsk Oblast -- 42, Tomsk Oblast -- 55, Novosibirsk -- 53, Kurgan -- 50, Irkutsk -- 32, Amur Oblast -- 54 and in Khabarovsk Kray -- by 18 degrees.

The local agricultural organs, and particularly Sel'khozkhimiya must carry out more active work in these matters and exercise constant control to ensure that the tasks are carried out.

A great amount of work remains to be carried out this year in mastering the intensive technologies for the cultivation of spring and winter wheat. Spring wheat will be grown throughout the republic on large areas and everyone must be aware of the high degree of responsibility which the agricultural organs and the kolkhozes and sovkhozes bear for ensuring that this very important work is carried out. Here we have in mind a large grain harvest. An average of not less than 20-22 quintals of grain per hectare of sowing following fallow must be obtained and from sowings planted at the second crop following fallow -- 15-18 quintals per hectare.

A characteristic feature in the cultivation of grain crops using intensive technologies -- a maximum amount of agrotechnical discipline during all stages in the formation of a crop. And if it is borne in mind that we must also obtain high quality grain, then work must also be carried out following the harvest directed towards forming the batches of grain and ensuring its proper processing.

It should be emphasized that this is basically new work for all of us and that it requires thorough professional knowledge, efficiency and a high degree of organizational ability. I would also like to serve notice that the requirement for carrying out the established grain production tasks using such a technology will be very strict.

Strengthening of the feed base. Over the past few years, definite positive improvements have been observed in the development of feed production in the Urals, Siberian and Far East regions. In particular, the production of coarse and succulent feeds has increased substantially, the proportion of concentrates in the animal rations has declined somewhat and the structure of the feed fields has improved. But today this is very little. In the development of feed production there are a number of problems, the solutions for which require concentrated attention.

Recently we have begun, more frequently and more persistently, directing the attention of the leaders of agricultural organs to the need for expanding the sowings of corn using the grain technology, in the interest of obtaining better quality feed for the livestock. The potential for accomplishing this is available in all regions in which the total amount of active temperatures reaches 2000 degrees.

We solve two problems simultaneously when we cultivate corn using this technology: we improve the quality of the feed and we economize in the use of grain. But this work is proceeding very slowly and many mistakes and miscalculations are being tolerated. The most typical of them -- a high sowing norm, which results in a situation wherein we obtain fodder without ears. Its nutritional value is not more than 0.14 feed units. We thus suffer great losses.

Under our conditions, it is most realistic to obtain corn of milky-waxy ripeness. In the process, the silage has a feed nutritional value that is higher by a factor of 1.5-2 than the usual feed. And in 1 kilogram of feed obtained from milled ears, with husks having a moisture content of 35-40 percent, there are roughly 0.7 feed units. Importance is attached to the fact that such feed is readily consumed by the livestock and that losses during storage are minimal -- not more than 7 percent.

We have discussed to great length the advantages of such feed and yet by no means are we doing everything to ensure that we have ample amounts of it. To the contrary, we are continuing to sow corn for the purpose of obtaining fodder.

This is convincingly borne out by data on the content of dry substance in corn silage. Practically in all oblasts, krais and autonomous republics, it is on the order of 20-22 percent and in Tomsk, Tyumen oblasts and in Khabarovskiy Krai -- 17-19 percent, that is, the same as must be found in silage obtained from fodder. If we prepare this feed from corn grown using the grain technology, then the dry substance in it must be not less than 35-40 percent.

We must devote greater attention to rape, which in addition to a high protein content also furnishes up to 70 quintals of feed units per hectare. In addition, it endures with comparative ease the stern climatic conditions found in Siberia and the Urals.

In reviewing the problems of feed production, mention must necessarily be made regarding the use of reclaimed lands. Forage crops occupy more than 800,000 hectares of reclaimed arable land in the eastern regions. In addition, there are approximately 1 million hectares of reclaimed haying and pasture land. Practically one out of every three reclaimed hectares of feed land in the republic is concentrated in these regions. However, there are still many unsolved problems in this work: very little fertilizer is being applied to the irrigated lands, the agricultural practices employed for cultivating the crops are being violated, the plantings are becoming sparse, waterings are not being carried out in a timely manner and the collective contract is being introduced into operations only weakly. It would seem that the collective contract would be ideal for irrigated lands and yet there is a very serious lack of them here. Last year, only 8 percent of the irrigated arable land was assigned to non-schedule collectives in Amur Oblast, Kemerovo Oblast -- 25, Kurgan Oblast -- 28 percent. All of this is delaying work directed towards raising the productivity of an irrigated fodder hectare.

The productivity of forage crops on drained lands continues to remain low. In Omsk Oblast it amounted to 7.3 quintals of feed unit per hectare and in Tomsk and Kemerovo oblasts -- 9. In order to obtain such yields, it would hardly be worth carrying out land reclamation measures or investing large amounts of state funds in it.

These examples are obviously sufficient to allow one to draw the conclusion that the status of affairs for feed production on reclaimed lands, just as on natural fodder lands, requires active intervention.

Here we have touched upon only a portion of the broad range of problems which we must solve in connection with branch intensification and they are all matters of decisive importance.

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REGIONAL DEVELOPMENT

NOVOSIBIRSK SEMINAR-CONFERENCE ON FOOD PROGRAM IMPLEMENTATION

Omsk ZEMLYA SIBIRSKAYA DAL'NEVOSTOCHNAYA in Russian No 6, Jun 85 pp 2-4

/Article: "Best Experience -- The Key To Success"/

/Text/ In March of this year, a seminar-conference was held in the city of Novosibirsk on the problem of "The introduction into production of scientific achievements and leading experience -- a decisive trend with regard to implementation of the Food Program." The leaders of agricultural organs in the Urals, western and eastern Siberia and the Far East participated in the work of this conference. At the present time, these regions are already producing one third of the gross agricultural output of the Russian Federation and at the same time they are making a worthy contribution towards implementing the republic's Food Program. The kolkhozes and sovkhoses in Tomsk, Kamchatka, Magadan and Sakhalin oblasts and in the Tuva and Yakutsk autonomous republics are successfully fulfilling their plans for 4 years of the five-year plan in connection with the sale of the principal types of livestock husbandry products to the state.

At the same time, as mentioned during the seminar-conference, the level achieved in the production of agricultural products in the oblasts, krays and autonomous republics of the Urals, west Siberian, east Siberian and Far Eastern regions is not satisfactory. It should not be forgotten that the Food Program calls for the population in the eastern regions to be reliably supplied with food products by means of local production.

And what has analysis shown? During 4 years of the 11th Five-Year Plan, the average annual production of grain, compared to the level achieved during the 10th Five-Year Plan, decreased by 16 percent in the west Siberian region alone and in the Far Eastern region -- by 33 percent. In particular, a large reduction in grain production was tolerated on kolkhozes and sovkhoses in the Altay Kray -- 23 percent, Omsk Oblast -- 24 percent, Maritime Kray -- 25 percent, Khabarovsk Kray -- 47 percent, Amur Oblast -- 36 percent and in Magadan Oblast -- 62 percent. Beyond any doubt, the production results were affected by the unfavorable weather conditions experienced over a number of years. Nevertheless the principal reason is the low level of farming management.

The following figures were also cited during the seminar-conference: in 1984, 202 of the kolkhozes and sovkhoses, or 30 percent of the farms in the Altay that are engaged in grain production, obtained less than 12 quintals of grain

per hectare; Chita Oblast -- 242 or 93 percent; Maritime Kray -- 94 or 58 percent and Amur Oblast -- 196 or 98 percent. Less than 6 quintals per hectare were obtained last year by farms in Chita Oblast, 135 farms in Amur Oblast and by 44 farms in the Altay Kray.

The situation is especially bad in connection with the production and procurements of durum and strong wheat grain, pulse crops and also millet and buckwheat.

Serious problems remain to be solved in livestock husbandry. The livestock and poultry plans for 4 years of the five-year plan were not fulfilled in Novosibirsk, Omsk, Irkutsk, Chita of Amur oblasts, in Krasnoyarsk, the Maritime of Khabarovsk krays. They undersupplied the state by more than 500,000 tons of meat and 800,000 tons of milk. An alarming situation is developing in connection with the production and procurements of milk this year.

The principal reasons for under-fulfillment of the plans for selling livestock husbandry products include low operational indicators for the kolkhozes and sovkhozes in connection with reproduction of the herd, the productivity of the animals and large livestock losses caused by death and disease. Can a situation be tolerated wherein the farms in Chita Oblast and in the Yakut and Buryat ASSR's milk yields per cow on the order of 1,500-1,700 kilograms and in Amur and Irkutsk oblasts and in the Maritime Kray -- 1,900-2,000 kilograms? The average daily weight increases in cattle during fattening in Chita, Amur and Sakhalin oblasts range from 360-380 grams and for swine -- 240-310 grams in Amur Oblast and in the Altay and Maritime krays.

A great amount of concern is being aroused over the low indicators for reproduction of the herd. Last year the farms in Chita and Amur oblasts and in the Buryat and Yakut autonomous republics obtained from 71 to 77 calves per 100 cows. Large numbers of cattle and swine are still perishing each year as a result of diseases and mismanagement.

In short, as mentioned during the seminar-conference, a great amount of work still lies ahead and it must be carried out in a systematic and objective manner, so as to ensure that agriculture in the eastern regions develops in a more reliable and effective manner. As a result of the situation that has developed, several large key problems requiring complete and immediate solutions have been pushed into the foreground.

Stability of leading personnel and labor collectives. Life has shown that an indispensable condition for creating hard working labor collectives is that of stability among the leading personnel. Last year, for the republic as a whole, a length of service at the same farm of up to 5 years was possessed by 59 percent of the sovkhoz directors and 55 percent of the entire staff of kolkhoz leaders and a service life of more than 10 year -- by 18 and 23 percent respectively. Nor is the situation any better in the oblasts, krays and autonomous republics of our region and in many areas it is even worse.

For example, in the Buryat ASSR 81 percent of the sovkhoz directors had a service life at the same farm of up to 5 years and in Magadan Oblast -- 77 percent and in the Yakut ASSR -- 72 percent, whereas the figures for more than 10 years length of service were only 8, 10 and 13 percent.

The continuing kaleidoscope with middle echelon leaders is arousing very serious concern, even though their importance in agricultural production is constantly increasing. Just as in the Russian Federation as a whole, so also in the mentioned regions, more than 60 percent of the staff of these workers are working less than 5 years at a given position on their farms. Their proportion is even higher in Tomsk Oblast -- 74 percent, in the Buryat ASSR, the Maritime Kray and Amur Oblast -- 70 percent and in the Yakut ASSR -- 77 percent.

All work concerned with the creation of stable work collectives must commence first of all with a skilful and well thought out selection of farm leaders. High exactingness must be combined with concern for them; control over the work of farm leaders must at no time be such as to paralyze their initiative and independence. This though was emphasized in particular during a speech by the chief of the Main Personnel Administration for the RSFSR MSKh /Ministry of Agriculture/ V.I. Dryzhov (the speech is published in this issue of the journal).

There are many experienced leaders in Siberia and the Far East: I.Ya. Enis -- chairman of the Zarya Kommunizma Kolkhoz in Omsk Oblast, N.I. Medvedev -- director of the Priobskiy Sovkhoz in Ordynskiy Rayon in Novosibirsk Oblast, A.F. Veprev -- director of the Nazarovskiy Sovkhoz in Krasnoyarsk Kray and many others. All of these people constitute our gold fund and their experience must be multiplied repeatedly at other kolkhozes and sovkhoses in the region.

Improvements in the forms for labor organization and payments. During the seminar-conference and based upon the region's leading farms, many of the participants became convinced once again regarding the chief path to be followed for raising the return from the potential that has been created in the rural areas -- the introduction of the collective contract into use in all areas. Today this should be viewed as a most important trend in the work directed towards strengthening the rural economy and as an effective means for developing the personnel in a spirit of a genuine economic attitude towards social labor.

Many facts describing the advantages offered by the collective contract were cited in the speech by the chief of the Main Administration for Labor Organization and Wages of the RSFSR MSKh A.A. Marushkin (published in this issue of the journal). They clearly reveal that the non-schedule collectives are achieving considerably higher indicators for the agricultural crop yields and livestock productivity, utilizing their logistical resources in a more efficient and thrifty manner and expending less labor and resources for the production of a unit of product.

In short, a more successful form has been found for labor organization and payments in agriculture.

The collective contract is being actively introduced into farming and livestock husbandry at kolkhozes and sovkhoses in Novosibirsk, Tomsk and Chita oblasts and in Khabarovsk Kray. Here such collectives are working 50-70 percent of the arable land and servicing up to 40 percent of the livestock.

In Krasnoyarsk Kray, a great amount of interest is being displayed in the operational experience of a swine husbandry complex at the Elita Breeding Plant,

where the collective contract was introduced into operations back in 1977. The effectiveness of the collective contract can be seen rather well using the Tomskaya Poultry Factory as an example in poultry production, whereas the Rodinskiy State Breeding Plant in the Altay Kray serves as a fine example for sheep raising. Many such examples could be cited and all of them serve to convince one that the introduction of the collective contract is an undertaking that is both promising and profitable.

The chief requirement in this regard was pointed out rather clearly for us during the seminar-conference: there is not and there cannot be a collective contract in the absence of cost accounting, or cost accounting in the absence of the check form of control. This requirement is very firm.

And if the work concerned with introducing the collective contract is evaluated from this position today, then it should be stated directly that there is still very little order here. Let us take as an example the Altay Kray, where cost accounting is believed to have been introduced at 89 percent of the farms while the check form of control is in use at only 21. A question arises: is cost accounting considered to have been introduced at those farms where the check form of control is not being used. I do not think so. Nor is it simply a matter of accounting, but rather it also has to do with the fact that under the check form of control the members of non-schedule collectives monitor their own expenditures. In addition, and this is also very important, the check form of control is very accessible and clear.

Very likely, the greatest difficulties are encountered with the conversion over to the collective contract of workers in dairy livestock husbandry. Here the brigade-team method is the most effective form for organizing labor. Under this method the milkmaids are joined into teams, which belong to brigades. However, each such team retains its individual assignment of cows and the milk yields are maintained on an individual basis.

The experience of some farms has shown that the collective contract is being introduced into operations more successfully in those instances where the collectives include leading workers and specialists and their earnings are also directly dependent upon the operational results of the brigades and farms. This was discussed quite well by the chairman of the Put' K Kommunizmu Kolkhoz in Kosikhinskiy Rayon in the Altay Kray M.V. Karapotkin.

The positive experience which is available with regard to the introduction of the collective contract must not be allowed to lie around as dead capital, but rather must be employed in behalf of all of the farms which have adopted them. In each oblast, there must be a base rayon for this and in each rayon -- a base farm.

It is no secret that quite often the economic leaders overlook such problems as the correct ratio between growth in labor productivity and wages, the return on investments, the use and turnover rate for capital and the quality and preservation of the products. In short, the economic reflection of a portion of the leaders and specialists bears the imprint of old managerial forms and methods.

This is borne out by the economic indicators of many kolkhozes and sovkhoses in the Altay and Maritime krais, where wages are growing considerably more rapidly than labor productivity. During the seminar-conference, many examples were cited showing how the wages for the same category of workers in neighboring oblasts fluctuated sharply despite the fact that they were operating under comparatively identical conditions. For example, in 1983 a milkmaid in Omsk Oblast produced an average of 66.6 tons of milk and in Tomsk Oblast -- 67.4 tons. The average monthly wage for milkmaids in these oblasts was 209 and 291 rubles respectively, or 38 and 52 rubles per ton of milk.

Moreover, such differences are even occurring in the same oblast. For example, let us take two farms in Novosibirsk Oblast -- the Ovchinnikovskiy Sovkhoz in Kochenevskiy Rayon and the Kolkhoz imeni Kirov in Kolyvanskii Rayon. Here the milk yields per cow amounted to 2,061 and 2,388 kilograms respectively, the workloads per milkmaid -- 29 and 40 cows, one milkmaid produced an average of 60 and 96 tons of milk, the average monthly earnings were 275 and 177 rubles and for 1 ton of milk -- 55 and 22 rubles.

Then there is the example of the best type of experience, a type that should become a reference point for many farms throughout the region. At the Nazarovskiy Sovkhoz in Krasnoyarsk Krai, the production cost for a quintal of milk amounted to slightly more than 15 rubles, that for the meat of cattle -- 70 and for pork -- 69 rubles. The indicators for this sovkhos, if not realistic for all, at least are so for a majority of our farms.

All-round production mechanization is directly associated with strengthening the kolkhoz and sovkhos economies.

Over the past 3 years, the increase that has taken place in the level of all-round mechanization has made it possible to increase the workload per principal worker engaged in livestock husbandry by 15 percent, and notwithstanding an increase in the numbers of livestock and poultry, to achieve a labor economy on the order of 150,000 average annual workers and on the whole to reduce the number of milkmaids throughout the republic by 60,000.

At the same time, this work is characterized by some very serious shortcomings. Over a span of 10 years, the level of all-round mechanization on cattle farms and marketable dairy farms on the whole increased throughout the republic from 23 to 54 and from 36 to 71 percent. In Chita Oblast, during this same period, the level of all-round mechanization on cattle farms increased from 5 to 21 percent and on marketable dairy farms, quite the reverse, it decreased from 37 to 28 percent. The work of livestock breeders in the Buryat, Tuva and Yakut ASSR is being mechanized to only a weak degree.

There is still another very large shortcoming in this work: at a whole series of kolkhozes and sovkhoses, an increase in the level of mechanization is not being accompanied by a review of the livestock workload norms for the livestock husbandry workers. And all of this is having an extremely adverse effect on the branch's economy and it is resulting in large labor expenditures and high production costs. For example, compared to Tomsk Oblast where 6 man-hours are being expended per quintal of milk, in Chita Oblast and the Buryat ASSR -- more than 11 and in the Tuva and Yakut autonomous republics -- more than 13 man-hours, compared to an average of 7.4 for the Russian Federation.

Any technology and any production process must necessarily commence with an economic consideration of how much will be spent and what these expenditures will furnish to the state.

Raising the fertility of soil and developing intensive technologies. The seminar-conference also included a discussion of a number of problems which are associated with the results of many of our endeavors. One such problem -- work with the land.

In raising the fertility of land, special attention must be given to increasing production and applying organic fertilizers to the soil. It bears mentioning that this is a very urgent problem and that it is not being resolved in a satisfactory manner. A simple approach cannot be employed for solving this problem. Augmenting the supplies of organic fertilizers, as noted by the speakers, must take place along several directions.

In a number of oblasts (Tomsk, Omsk, Kamchatka, Sakhalin), where there are considerable supplies of peat, the peat procurements should be increased in a planned manner and the preparation of peat-manure composts should be organized on an extensive scale. Very fine experience is available in this regard in Tomsk Oblast.

In Krasnoyarsk Kray and in Irkutsk, Chita and other oblasts, where supplies of lignin and other waste products of the wood-working industry are available, use should also be made of these products for the production of composts.

But such opportunities are not available in all areas and today it is absolutely clear that the problem of creating a self-supporting humus balance in soils cannot be solved in a number of oblasts where no genuine effort is going forward in the cultivation of green-manure crops. We have such opportunities available to us. Positive experience in the cultivation of these crops has been accumulated in the Altay Kray and it must be disseminated on a rapid basis.

Considerable improvements must be carried out in the quality of the organic fertilizer. There is only one method available for accomplishing this here -- the construction of manure storehouses and sites for the preparation of composts.

An urgent problem on farms in the Far East continues to be that of applying lime to the acid soils, which constitute 90 percent of the arable land here, of which 67 percent of the soils are either strongly or medium acid. In the southern part of the region, there are more than 5 million hectares of solonetz soil requiring gypsuming or land reclamative treatment. However, such soil improvement work is being carried out extremely slowly. Phytoreclamation, which under the conditions found in this zone produces positive results, should be carried out in a very decisive manner. A great amount of work remains to be carried out in connection with raising the effectiveness of mineral fertilizers and especially phosphorus fertilizers.

Concern for expanding the volumes of all-round agrotechnical soil improvement work must be more objective in nature. This is particularly true in view of the fact that within the region there is a large quantity of clean fallow which, from both an agronomic and organizational standpoint, ideally requires that this work be carried out.

A great amount of work still remains to be carried out this year in connection with mastering the intensive technologies for the cultivation of spring and winter wheat. An average of not less than 20-22 quintals of grain per hectare must be obtained from plantings sown following fallow and for plantings sown as a second crop following fallow -- 15-18 quintals.

During the course of the seminar-conference, all aspects of the problem concerned with the introduction of intensive technologies were discussed in a detailed and thorough manner. Many of the speakers noted that this is a basically new type of work. It requires thorough professional knowledge, efficiency and high organizational ability in all matters, with the requirement for carrying out the established tasks for grain production using such a technology being very strict.

Strengthening the feed base. Special attention has always been given to those problems concerned with strengthening the feed base. In many of the speeches, emphasis was placed upon the need for expanding the corn sowings for cultivation using the grain technology, in the interest of ensuring high quality feed for the animals. The potential for accomplishing this is available in all rayons where the total amount of active temperatures reaches 2000° Centigrade.

Two problems are solved simultaneously when cultivating corn using this technology: the quality of the feed is improved and a savings in the use of grain is realized. But we are carrying out this work very slowly and mistakes and miscalculations are being tolerated. The most typical examples -- a high sowing norm, which leads to a situation wherein large amounts of fodder are obtained without ears. Its nutritional value is not more than 0.14 feed units. Great losses are thus sustained.

Under our conditions, it is best to obtain the corn when it is in the milky-waxy ripeness stage. At such times, the nutritional value of the silage is 1.5-2 times higher than usual. And in 1 kilogram of feed obtained from milled ears with husks having a moisture content of 35-40 percent, there are roughly 0.7 feed units. It is important for such feed to be consumed readily by the livestock and also for storage losses to be held to a minimum -- not more than 7 percent. And if this feed is prepared from corn grown using the grain technology, then its dry substance must be not less than 35-40 percent. More active use should be made of rape, which in addition to a high protein content, furnishes up to 70 quintals of feed units per hectare.

The experience accumulated in the preparation of grain haylage at the Nazarovskiy Sovkhoz in Krasnoyarsk Kray is of great practical interest to all. Grain haylage, which is prepared here from cereal grain and pulse crops, harvested during the stage of waxy ripeness, is a sufficiently nutritional and cheap feed. Its nutritional value is 0.35 feed units and its production cost per quintal of feed units does not exceed 3-4 kopecks. This feed, balanced in terms of both carotene and sugar, has become a firm part of the ration for cows and cattle undergoing a fattening regime. Each year it is placed in storage on the farm in a volume of not less than 20,000 tons. Last year the labor expenditures per quintal of feed amounted to 0.1 man-hours. It is hoped that this experience will also be used by many of our farms. It will be discussed extensively in the next issue of the journal.

In connection with the feed production problems, much was said during the conference regarding the use of reclaimed lands. And this was by no means an accident. Practically one out of every three hectares of reclaimed feed land in the republic is concentrated in the eastern regions.

On many farms, very little mineral fertilizer is being applied to the irrigated and drained lands, the plantings are sparse and the collective contract is not being introduced into operations. Hence these farms continue to operate on a low productivity basis. Nor are all measures being undertaken within the region aimed at ensuring the effective use of the natural feed lands. There are vast areas of such land in this region and yet the productivity of the feed lands is low -- on the order of 5-7 quintals per hectare. The work of carrying out soil improvements on this land is being conducted in a very passive manner. Very poor work is being carried out in Irkutsk Oblast and in the Maritime and Krasnoyarsk krais in connection with improving the haying and pasture lands.

During the seminar-conference, the participants succeeded in discussing only a portion of the broad range of problems concerned with intensification of the branch. However, these problems are the decisive ones and should be the object of constant attention by all parties concerned. There can be no doubt but that the agricultural workers of Siberia and the Far East are doing everything possible to ensure that worthy preparations will be made for the 27th party congress and that the decisions handed down during the April (1985) Plenum of the CPSU Central Committee will be carried out successfully.

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REGIONAL DEVELOPMENT

LITHUANIAN CONFERENCE REVIEWS INTENSIFICATION TASKS

Vilnius SOVETSKAYA LITVA in Russian 11 Jul 85 p 1

[Article from EL'TA: "On the Path to Production Intensification"]

[Text] Kaunas. 10 July. (EL'TA). A republic conference of agricultural workers took place today in the Lithuanian Veterinary Academy. Issues discussed at the conference were the acceleration of scientific and technical progress in agriculture and better organization of the harvest. Attending the conference were the first secretaries of the party raykoms, chairmen of the RAPO councils, chief agronomists and mechanical engineers from agricultural administrations, managers of rayon associations of Selkhoztekhnika, and agrarian scientists.

Participating in the conference's work were R. Songayla, chairman of the LiSSR Council of Ministers, V. Astrauskas, secretary of the Lithuanian CP Central Committee, Yu. Bernatavichyus, first deputy minister of the republic's Council of Ministers and chairman of the Council of Ministers Presidium Commission for Questions of the Agro-Industrial Complex, A. Kayryalis, chairman of the LiSSR People's Control Committee, N. A. Stolbukhin, USSR deputy minister of agriculture, administrators of the republic's agro-industrial complex ministries and departments, and responsible party, soviet and trade union workers.

V. Astrauskas, secretary of the Lithuanian CP Central Committee, gave the conference's opening address.

N. A. Stolbukhin, USSR deputy minister of agriculture, congratulated the farmers and workers of the republic's State Committee for the Supply of Production Equipment for Agriculture on the glorious labor victory they attained in the 1984 All-Union Socialist Competition, increasing the efficient use of agricultural equipment, and awarded them the Challenge Red Banner of the USSR Council of Ministers and the VTsSPS [All-Union Central Council of Trade Unions].

S. Vasilyauskas, the republic's first deputy minister of agriculture, presented a report at the conference.

Yu. Bernatavichyus, first deputy chairman of the republic's Council of Ministers, A. Zorskas, chairman of the LiSSR State Committee for the Supply of Production Equipment for Agriculture, A. Prapuolyanis, director of the Scien-

tific Research Institute for Agricultural Mechanization and Electrification, A. Budvitis, director of the Scientific Research Institute for Farming, Yu. Zhebrauskas, the republic's first deputy minister of procurement, and V. Shlikas, chairman of the Rokishkskiy Rayon's Kolkhoz imeni L. Gira, addressed the conference on the issues of scientific and technical progress, of harvesting the yield, of the organization of procurement and on other pressing problems.

It was noted at the conference that the republic's farmers, by incorporating both the recommendations developed by scientists and new equipment, and by leaning heavily on the experience of the foremost workers, have achieved ever more ponderable successes with every passing year. There are a number of farms which are getting 4 to 5 metric tons of grain per hectare, large harvests of other crops and, on the average, 4 to 5 metric tons of milk per cow per year. However, the available scientific and production potential is not being fully used everywhere and, therefore, all the potential for increasing the production of agricultural products is not being brought out. Proceeding from the directives of Comrade M. S. Gorbachev, general secretary of the CPSU Central Committee, regarding the further intensification of production based on scientific and technical progress, our republic's scientists--the agrarians--are confronting important and crucial tasks. It is necessary to develop effectively specific recommendations which will enable labor productivity to be raised by 18 to 20 per cent during the 12th 5-year plan, significantly increasing output and reducing production costs.

The conference's participants emphasized that the main thing now is to store up as much fodder as possible for the wintering of the cattle. 71 feed units of coarse and rich fodder from the first cutting of grass have already been stored up for each nominal head of cattle. Their stores must be significantly enlarged at the expense of the aftergrass, which has already begun to be cut. This is particularly urgent for farms which have fewer stores of these fodders than the republic average. More attention ought to be paid as well to care in the sowing of cultivated crops, other silage crops and pastures.

While preparing completely for the coming harvest, before it begins, it is necessary to prepare the clover fields efficiently for the sowing of winter crops, and to accelerate the overhauling of the equipment for the harvesting of the potato crop and industrial crops. Likewise the harvest conveyer itself must be well organized beforehand so that there are no obstacles to starting the harvest on schedule and to maintaining the harvest's brisk pace from the very first days.

Generally, without discontinuing the harvest, it is necessary to process the grain and straw and to remove the stubble. The straw must be cut up as much as possible into small pieces and compressed, and the rest stacked in previously selected spots. In all sectors it is necessary to struggle resolutely against harvest losses.

Even now every combine should have its own master. This equipment, along with transportation and straw-cutting facilities, storehouses and drying facilities, should be put into final readiness in the next few days.

While planning the harvest work, the farm managers and specialists are obliged to outline beforehand the opportunities for the timely laying in of seed stores and for the fulfillment of grain procurement. Also considered to be very important issues are the efficient organization of the work of assistants, the safety of the people's labor and the protection of the harvest against fires and theft. In order to harvest the rather good crop grown this year, on schedule and without losses, it is necessary to incorporate the collective contract as widely as possible in all production groups, to promote socialist competition, to announce its results daily, and to provide outstanding production workers with incentives in the proper manner. All the organizations of the agro-industrial complex are obliged to help the farmers in solving all these tasks confronting them.

The conference's participants made an appeal to kolkhoz and sovkhoz workers, to farm managers, to agricultural specialists and to all the agro-industrial complex's workers.

They also acquainted themselves with the latest in harvesting and other agricultural equipment.

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AGRO-ECONOMICS AND ORGANIZATION

PASKAR ON SCIENTIFIC, TECHNICAL PROGRESS IN APK BRANCHES

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 25 Jun 85 p 2

Article by P. Paskar, 1st deputy chairman of USSR Gosplan: "Chief Lever for Intensification"/

Text The functioning of the country's APK agroindustrial complex is today closely associated with many branches of the national economy. According to data supplied by the Main Computer Center of USSR Gosplan, roughly 32 percent of the output of heavy industry, which accounts for 45 percent of the freight transport shipments and communications services, is being expended for the purpose of satisfying the population's requirements for food goods produced by the complex. During the current five-year plan, more than one third of all of the country's construction projects of a productive nature, carried out on the basis of state capital investments, were concentrated in the APK.

Is it necessary to prove that the conversion of production over to the intensive path of development is becoming tremendously important here? And the methods for carrying out this conversion were defined very clearly during the April (1985) Plenum of the CPSU Central Committee. In the form of the chief strategic level for intensification of the national economy and for ensuring the best use of the potential that has been accumulated, the party has advanced into the foreground the increased need for accelerating scientific-technical progress.

For the period up to 1990, the USSR Food Program has called for the completion for the most part of all-round mechanization of agricultural production and the re-equipping of the food branches of industry on a new technical basis. In the process, the machine building ministries have been assigned the task of not just simply increasing the production of machines and equipment, but also raising considerably the quality of these machines and equipment. Thus it will be necessary to raise reliability and productivity, to increase the service periods, to lower material-intensiveness and to improve the fuel-economic and other characteristics. The thorough processing of agricultural raw materials must be introduced into operations in the food branches of industry on a more extensive scale, the losses in such materials must be reduced, quality must be improved and the assortment of food products must be expanded.

The measures adopted by the party and government following the May (1982) Plenum of the CPSU Central Committee for accelerating the technical re-equipping of the

APK branches are producing noticeable results. Thus Minsel'khoz mash /Ministry of Tractor and Agricultural Machine Building/, during 4 years of this five-year plan, developed more than 260 and mastered the production of 108 new types of machines and equipment. The technical level of a majority of these items of equipment is in keeping with the modern requirements. During the current five-year plan, more than 70 technical items from obsolete designs will be removed from production at enterprises of this ministry.

There are many collectives within the machine building branches which are in the vanguard of technical progress and which are very sensitive to the needs of the times. For example, soil cultivation equipment created in a design bureau for cultivators and hitches at the Krasnyy Aksay plant has proved its worth. The collective, headed by General Designer Yu. Mukhin, is striving to provide the farmers with high quality equipment. Modern equipment is being produced for enterprises of the food industry by the collectives at the Kapsukas Association for automatic food machines, which is headed by I. Sheshkyavichus, the Melitopolprod mash Association (General Director A. Pavlyuchenko) and some others.

Definite positive improvements have taken place recently with regard to strengthening the technical base of the meat, dairy, food and other branches of the processing industry. This has made it possible to fulfill the planned tasks for 1983-1984 in connection with the production of meat, animal oil and cheeses and also for the sale of meat and dairy products and lowering the production costs for such products; to increase the production of products made from skim milk, buttermilk and whey, sausages and semi-finished meat products using protein components.

Nevertheless, the work rates for the technical modernization of the branches of the agroindustrial complex are still not ensuring solutions for the large-scale tasks called for in the Food Program.

Agriculture does not have at its disposal an adequate supply of equipment for the general introduction of scientifically sound, progressive and economic technologies for producing goods or for the carrying out of field operations during the best agrotechnical periods. Hundreds of production operations, in which more than one half of all workers on the farms are engaged, are still being carried out manually at the kolkhozes and sovkhozes.

All of this is resulting in a considerable shortfall in grain, potatoes, vegetables, feed and other farming products and it is lowering the quality of these products.

Valid complaints, concerning both the quantity and quality of the equipment being produced by enterprises of Minzhivmash /Ministry of Machine Building for Animal Husbandry and Fodder Production/, are being registered today by the livestock husbandry workers -- a very complicated and labor-intensive branch.

An unsatisfactory situation has developed in connection with the technical equipping of the processing branches.

Thus, at enterprises of the USSR Ministry of the Meat and Dairy Industry, a considerable portion of the fixed industrial-productive capital has become

obsolete and physically worn out. More than one third of the refrigerators at meat combines are in urgent need of capital-restorative repair work. The requirements of the enterprises of this ministry for a majority of the types of machines and mechanisms are being satisfied by only 55-60 percent. The level of mechanization of labor processes is increasing only slowly. In some branches, more than 40 percent of the workers are carrying out manual operations.

The Ministry of Machine Building for Light and Food Industry and Household Appliances and other machine building ministries are not carrying out their planned tasks for the creation and deliveries of highly productive equipment and they have not organized the production of many types of equipment that would ensure the processing of livestock husbandry raw materials in accordance with a completed cycle. Among the items being produced by plants of Minlegpishchemash /Ministry of Machine Building for Light and Food Industry and Household Appliances/, a high proportion of the machines, mechanisms and units derive from obsolete designs.

For example, let us take a line for the production of pelmeni and quenelle, which is being produced by the Cherkassy Machine Building Plant imeni G.I. Petrovskiy (Director V. Kushchenko). The design and quality of this line are such that its real productivity is only one half of that planned and products produced on it quite often do not conform to the GOST /State Standard/. Moreover, many workers are required for servicing the line.

The Poltava Prodmash Plant (Director A. Zatkhey) supplies consumers with a low productivity line for the preparation of chops. Fruit and vegetable industry workers have registered some serious complaints against the "Ritm" type machine, which is being produced by the Odessa Mechanical Plant (Director V. Gimborg). This machine is used for the cutting up of raw materials and yet it leaves large quantities of waste scraps and its cutting units wear out rapidly.

Many such examples could be cited. Certainly, they are not to be tolerated. "And it is completely unacceptable" stated Comrade M.S. Gorbachev during a conference held recently in the CPSU Central Committee on matters concerned with accelerating scientific-technical progress, "when a newly created item of equipment, even during the design stage, turns out to be obsolete and inferior to the best indicators in terms of reliability, service life and economy of operation."

In April the Politburo of the CPSU Central Committee examined the question of accelerating the development of the logistical base for the processing branches of the agroindustrial complex and it pointed out that the tasks established by the Food Program and associated with the creation of capabilities for the storage and processing of agricultural products are being carried out slowly and that food machine building is lagging behind its planned tasks.

The party's Central Committee has required the appropriate ministries and departments to do all that is necessary to ensure the construction, technical re-equipping and modernization of the processing enterprises and complete utilization of the existing production base. In addition to new construction, the task consists of relying chiefly upon the technical re-equipping of enterprises and realizing savings in the use of resources.

USSR Gosplan, jointly with other interested ministries and departments, is presently developing specific measures aimed at ensuring that a further strengthening of the base for the storage and processing of agricultural raw materials will take place during the 1986-1990 period, that the necessary capital investments and contractual work limits will be allocated for these purposes and that the planned volumes of capital construction will be balanced with the true potential for equipping the construction projects with modern technological equipment.

All of this requires considerable improvements in the work being carried out in the various areas and more efficient utilization of the material and financial resources being made available.

The planning and economic organs must do everything possible to ensure the practical implementation of the instruction handed down by the CPSU Central Committee: the re-equipping of all branches of the national economy must be carried out on the basis of modern scientific and engineering achievements and a conversion over to basically new technological systems, which will produce the greatest effectiveness.

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AGRO-ECONOMICS AND ORGANIZATION

ECONOMISTS DISCUSS ECONOMIC MANAGEMENT PROBLEMS

Moscow EKONOMICHESKAYA GAZETA in Russian No 27, Jul 85 p 16

[Article by N.Dudorov: "The Duties and Concerns of Rural Economists"]

[Text] A conference was held recently at the VDNKh devoted to economic work in kolkhozes and sovkhoses. It was organized by the newspapers EKONOMICHESKAYA GAZETA and SELSKAYA ZHIZN, the Central Board of the Scientific and Technical Society for Agriculture, the all-Union association "Agropromizdat" and the pavilion "The Economics and Organization of Agricultural Production". Invited to the conference were a large group of agrarian economists from various regions of the country, top officials from the ministries and scientists working in the field of agrarian economics. Here are some observations from the conference.

The meeting touched on a wide range of issues pertaining to the improvement of economic work in kolkhozes and sovkhoses. I would like to dwell here, though, only on the main problems, those that relate to the recovery of funds invested in the intensification of agricultural production, the assimilation of interorganizational cost accounting, and on its basis the team contract, and economic incentives for the end result.

Why Costs Are Rising

Many economists, regretfully, have come to hold the view that the high cost of farming and animal husbandry products is due mainly to the appreciation of industrially produced means of production, as well as of the project construction process and of a number of services by associates of kolkhozes and sovkhoses. Farmers would therefore seem to have only limited possibilities for reducing expenses.

That such is not the case was convincingly proved by G.Kulik, deputy chief, Economic Planning Administration, RSFSR Ministry of Agriculture. He cited some interesting figures according to which there has over the past few years been a significant rise in costs per 100 rubles of produce not only in monetary but in physical

terms as well. This means that the blame for much, if not most, of the rise in costs of agricultural produce must be put on the workers of the agrarian sector themselves in that they do not adequately utilize the available reserves to increase output and reduce the cost of producing it.

Moreover, it was also revealed that there are cases when the productivity of labor in farms of this or that area is significantly lower than in a neighboring, similar region, but the earnings per worker are on the same, sometimes even higher, level. Thus, in the last four years the average output of a farm worker in Gorky Oblast was 3800 rubles per year and his annual pay was 1950 rubles, whereas in Kuibyshev Oblast the corresponding figures were 5400 and 1804 rubles. Consequently, the workers of many farms have high earnings in spite of meager crop yields and low livestock productivity. This is mainly due to bad planning, accounting and labor-norm setting, to the absence of persistent efforts to introduce advanced methods into the organization of production.

Mentioned as a model of diligent and capable farming was the sovkhos "Nazarovskiy" of Krasnoyarsk kray where all sectors are profitable and the cost of agricultural produce, all other things being equal, is low. The experience gained by this farm, as by many others, merits the most careful study and the widest possible dissemination. And it is above all up to the economists to do the job.

Thrift Must Be Practiced By Each And All

It was stressed in one speech after another that today every worker must to some extent be an economist, must know the basic elements of production costs and the factors of profitability, in other words, must be assiduous in every aspect of the job.

"Even an individual family must keep strict track of its income and expenditures. We often see two families with equal budgets yet with sharply different living standards. One has everything, is solidly established, the other is perennially broke. How much more important for a large farm to keep a watchful eye on its economics every day."

So began the speech M.Gvozdz, chief economist of kolkhoz imeni Zhdanov in Zolotonosha rayon, Cherkassy oblast. She outlined in detail the qualities that the economist of a kolkhoz, sovkhos or any other enterprise or organization of the agroindustrial complex must possess. Above all he must be well learned, that is, must know the basics of every sector of agriculture, love his work, incessantly study the new and persistently incorporate advanced experience into production. The economist's function is not only to register facts, but to discover the reasons behind them and the tendencies in the evolution of this or that aspect of the farm's economy.

If that means breaking old habits, one should not hesitate to stand up even to the director or chairman when he is indifferent to, say, the team contract idea or the checking system of payments and cost control.

The economist must gain respect solely through his work. In that case he will have good relations with the various specialists technologists, accountants, the leadership of the farm. Naturally, management must not use economists for petty jobs, trivial assignments; they must not be diverted from their important functions of analysis, cost control, improvement of the planning process and intraorganizational cost accounting.

It should be noted that the conference was marked by a certain difference of opinion regarding the checking system. Some averred in no uncertain terms that unless it is in place one cannot consider intraorganizational cost accounting to be fully operative. In the opinion of others, this is a rather harsh demand. Those farms where assignments are well substantiated and their implementation supervised usually achieve success even without the checking system. Here are a few remarks on that score:

V.Taranov, deputy director for economics, the "Moskovskiy" sovkhoscombine, Moscow Oblast:

"In our opinion, the checking system is an absolute necessity for those farms where interorganizational cost accounting does not, in effect, exist, where only individual elements thereof are in operation or it is organized as a mere formality. As for us, it is now 15 years since we began handing down assignments to every subdivision and placing a limit on expenditures. Cost accounting and a policy of thrift permeate every sector of production, have become a way of life for the collective. That is why for us the checking system is not such a vital necessity, though it could play a positive role."

A.Nikishina, chief economist of kolkhoz "Vostok", Shchelkovskiy Rayon, Moscow Oblast, expressed this opinion:

"I am wholeheartedly in favor of the checking system of payments between cost accounting subdivisions. It is not, however, a cure-all for every ill, but a form of economic work. In my view, the time has come to plan wages in agriculture by set norms per one ruble of gross production. These norms should be differentiated according to the specialization of the farms."

The participants of the conference all pointed to an acute shortage of various reference books, particularly those concerned with norms in repair work and other ancillary sectors. Among those who spoke on the subject were V.Skakun, chief economist, kolkhoz imeni Shchors, Chernobayevskiy Rayon, Cherkassy Oblast; M. Sedova, chief economist, "Zhilevskiy" sovkhos, Moscow Oblast; G. Luzhnina, chief, economic plan-

ning department, Lyskovkiy RAPO, Gorkiy Oblast; G. Penkova, chief economist, sovkhoz "Krasny Kolos", Lipetsk Oblast, and others.

The Effect of the Team Contract

The majority of speakers at the conference, to a lesser or greater degree, touched on problems related to the introduction of the team contract and its effectiveness both in plant growing and livestock breeding. Quite a few examples were cited when adoption of this progressive form of labor organization and remuneration helped bring about a sharp increase in the productivity of field and livestock farm, a reduction in labor and material input per quintal of yield.

One example is the tractor brigade of the imeni Zhdanov kolkhoz, Zolotonoshskiy Rayon, Cherkassy Oblast where the grain yield after adoption of the team contract increased by 5 quintals to 35.7 quintals per hectare. The team contract also proved itself well at the cattle breeding farm of this kolkhoz. Fodder consumption per centner of weight gain declined by four centners of fodder units, productivity of labor rose more than 50 percent.

A major effect was produced, along with other measures, by the team contract method at the kolkhoz's dairy farm. In just one year the average milk yield per cow increased by 509 kilograms. The production cost of a quintal of milk dropped to 21.25 rubles.

Assimilation of the team contract method has made it possible to increase the animal servicing norm. Today one operator of the cattle-fattening sector handles 160 head; in kolkhozes which have not yet made the transition to the new form of labor organization and remuneration the figure is 70-75 head. Previously the kolkhoz found it difficult to staff its dairy farm with milkmaids. Nowadays the problem does not exist - young people are quite willing to take jobs in the cattle-breeding sector.

Speakers also noted that the adoption of the team contract method by a subdivision quite often produces no positive results. Indeed, at the present time about 40 percent of the arable land and close to 40 percent of the cattle in the kolkhozes and sovkhozes of the RSFSR are worked by contract units and brigades. Nevertheless, no significant change in crop yields or animal productivity has taken place. As a result, the growth in pay has outstripped the growth rate of labor productivity.

Another topic the participants touched on at the conference concerned shortcomings in the current instructions on introducing the team contract method into crop cultivation and cattle breeding. All were of the opinion that the recommendations should be simplified to make them understandable to every economist. This should

be done by the USSR Ministry of Agriculture together with scientists engaged in the economics of agriculture.

Several economists spoke of serious flaws in the planning process. Very often the upper organizations are late in allocating the necessary material and technical resources, forcing planners to rely on past years' figures or, as the saying goes, take them off the ceiling. This leads to a sharp deterioration in plan quality and hampers the utilization of all available production reserves. In a short while the farms will start drawing up their plans for the 12th Five-Year Plan. This important work must be done well and on time. The "Agropromizdat" publishing house was requested to increase the issue of various reference manuals for economists.

The question was raised at the conference of the need to improve the training of agrarian economists. It was pointed out that many of those sent to the farms literally lose their bearings and take a long time adjusting. They know very little about planning and experience difficulties in making out cost-accounting assignments or introducing the team contract method.

Also noted was the fact that at the present time kolkhoz and sovkhos technological specialists often shy away from economic problems, devoting very little attention to searching for reserves in the matter of cost reduction.

At the conclusion of the conference a compendium was drawn up of all the main issues and conclusions made by the speakers. These materials will be utilized by the USSR Ministry of Agriculture and scientific organizations to develop new and brush up existing recommendations on improving economic work in the rural areas.

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AGRO-ECONOMICS AND ORGANIZATION

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IMPROVING ECONOMIC MANAGEMENT OF REGIONAL APK

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 7, Jul 85 pp 39-43

[Article by A. Bondar , responsible secretary of the Commission for Questions of the Agro-Industrial Complex of the Moldavian SSR Council of Ministers Presidium, S. Pavenskiy, candidate of economic sciences and docent (Kishinev Polytechnical Institute), and I. Morozov, candidate of economic sciences (Kishinev State University): "The Economic Mechanism of Regional APK"]

[Text] For the purpose of successful realization of the Food Program, certain work was conducted in Moldavia aimed at eliminating disproportions in the development of individual sectors of the regional APK, which were formerly tolerated, and the cost accounting bases and economics of kolkhozes, sovkhoses and interfarm enterprises were strengthened. However, there are still many problems which will have to be solved by the new management organs--councils for questions of APK rayons and the Commission for Questions of the APK of the Moldavian SSR Council of Ministers Presidium. One of them--improvement of the economic (operational) mechanism of the regional APK.

The basic directions in perfecting economic mechanism of the APK are improving planning, raising effectiveness of economic levers and incentives and optimizing organizational management structure in all spheres of activity.

What should the economic mechanism system of the APK be aimed at on the regional level? In what direction is it necessary to have an effect upon the factors which determine development of this sytem? An answer to these questions should be sought in the theory of economic interests: For ensuring a more efficient functioning of all spheres of the regional APK and achieving its main goals it is necessary to direct the economic mechanism toward optimizing interests of workers and collectives in the complex itself as well as in the sectors linked to it.

To a certain extent the APK is a self-sufficient and self-consumption complex, since a part of the output produced in it is consumed within itself (by its sectors). Proceeding from these positions, it is one thing to plan the development of internal realtions and to optimize them within the framework of the APK, but it is another matter to develop external relations. In our opinion, the solution of internal problems of the APK depends to a considerable degree

on the functioning efficiency of complex sectors and the competence, initiative and efficiency of its management. From this it follows that work of the APK as a unified organism is for the most part appraised according to the degree the internal problems are solved. Other methods and criteria of appraisal are needed in planning external relations, since these relations do not depend on the development of the APK.

In developing measures for improving the economic mechanism of an APK of a specific region it is necessary to take into account the participation share of the complex and its individual sectors in social production of a republic and the country as a whole. For example, the APK of the Moldavian SSR produces 65.6 percent of gross national product and 54.5 percent of national income of the republic, 48 percent of all workers are employed in it. The production share of the APK in the overall production volume of Moldavia's industry in 1983 amounted to 53.2 percent, including 3.2 percent of production of sectors which provide the complex with means of production and 49.9 percent of sectors which process agricultural raw materials.

The food industry of the APK, whose enterprises have been operating under conditions of a large scale economic experiment since 1 January 1985, employs 25 percent of all workers, 30 percent of all fixed capital available in the industry of the republic is concentrated in it and these indicators considerably exceed similar ones on the average in the country; the level of per capita production output is twofold higher than the average for the union. The Moldavian SSR is one of the republics where the level of concentration of production in this sector is the highest and where capital-labor ratio is 25 percent higher than on the average in the country's food industry. Forty-two to 50 percent of the food industry's output in the region being examined goes to the all-union fund.

The processes of agro-industrial integration and interfarm cooperation have been developing in the republic for more than 20 years. Integrated formations such as sovkhozes-plants and scientific production and interfarm associations were functioning here at first, which were included in rayon agro-industrial complexes in 1982-83 (sectorial agro-industrial associations of sovkhozes-plants are operating in the republic). Consideration of this feature is also important for improving the economic mechanism of the APK in this region.

The dynamism of development of the agro-industrial complex depends very much on further improvement of the entire planning system. The insufficient scientific basis of planning is due to the fact that differences of farms and enterprises of the APK with regard to the level of production potential are not being taken into account. These differences are particularly significant in agriculture. In Moldavia, for example, depending on the steepness, layout and location of hill slopes the difference in the duration of the frost-free period reaches 30 days. Even within one crop rotation field, individual plots sharply differ with regard to soil fertility and the number of workers, specialists and equipment on farms is different.

Under such conditions it is extremely necessary to have an objective economic appraisal of the entire production potential, which will make it possible to

differentiate plans for the purchase of agricultural production and prices for it and thereby will place all enterprises under equal management conditions, and this will make it possible to more fully implement the principle of equal pay for equal work. The problem of equalizing economic conditions of management and reproduction in the APK must be solved not only through the sphere of distribution, as some authors propose that it be done, but primarily through the sphere of production by means of economic appraisal of its potential. We fully agree with A. Kalnyn'sh, who proposes to develop a unified system of methods for all regional APKs for appraising production potential (see VOPROSY EKONOMIKI, 1984, No 4, p 71).

Certain work has been done in Moldavia with regard to economic appraisal of land and a system of methods has been developed for introducing it on farms, which is already being used in practice. However, work still has to be done in appraising not only land but the entire production potential in various spheres of the APK and in establishing conformity between them. The latter is particularly important. For example, enterprises of the Sel'khozkhimiya [not further identified], which belong to the third sphere of the APK, supply fertilizers and pesticides, apply them to the soil and so forth. If their production capacities do not correspond to the needs of agriculture, then work will not be fulfilled on time in the necessary volume.

Perfecting planning for the purpose of improving work of enterprises and organizations which serve the farm sector must proceed along the line of improving the contractual system. Moldavia's experience proves that the contractual system is an important tool in the economic mechanism of the APK, which promotes strengthening of the systematic interaction between its spheres. Thus, economic interrelations of the given spheres of the APK are regulated through a network of contracting agreements between agricultural and industrial processing enterprises, but economic relations at the delivery stage of finished products to consumers as well as of agricultural raw materials to plants are regulated with the aid of contracts between organizations providing services to the farm sector and the farms. Types and volumes of work and periods of its fulfillment are stipulated in contracts by partners in the agro-industrial complex. However, in practice both sides often violate the conditions of these contracts, which leads to great losses of production.

For example, harvesting of the late ripening varieties of tomatoes in the Leninskiy Put', Put' K Kommunizmu and some other sovkhoses of Suvorovskiy Rayon in 1984 was repeatedly disrupted owing to tardy hauling of tomato pulp to the canning plant from a nearby tomato line. The reason for poor work of the servicing transport organization consisted in the reluctance of pulp carrier drivers to haul raw material over short distances; they preferred much longer runs since their wages depended on ton-kilometers.

Thus, it turns out that economic interests of an individual worker and entire collectives of organizations which provide services to the farm sector are not coordinated with the interests of farms and processing enterprises. The rayon APK cannot solve this problem by itself, since the rates and prices for transportation and construction and installation work are set in a centralized order

from above. Owing to imperfection of work appraising indicators of servicing organizations the effectiveness of the contractual system is being reduced, division of work into profitable and unprofitable is being tolerated and adherence to contract conditions for types of work is being hampered.

The system of plan indicators for APK sectors also needs improvement. A complex and cumbersome system of indicators is used at the present time, which is separate for agricultural and industrial subdivisions of the complex at regional and rayon levels. Numerous intermediate indicators are set from above, which have a negative effect on agro-industrial production efficiency. For example, sugar beet growing farms get a plan for the sale of sugar beets without taking into account the output of final production from them--sugar. Therefore, the farms are not as much concerned about the quality of sugar beets as about their "production volume." It is necessary to orient all spheres in the APK toward a goal, and not a goal toward the functioning of the spheres, which still happens in individual cases. Evidently, there is a need for further strengthening of the comprehensive nature of planning in the APK and standardization and limitation of directional indicators as well as calculation of long-term norms in all spheres of the complex with orientation toward final production. It is expedient, we believe, to draw up a sugar output and delivery plan for the regional APK on the basis of plans for rayon APKs.

At the rayon level of the agro-industrial complex, for the purpose of ensuring flexibility in planning under changing production conditions and requirements structure, it is necessary to raise the significance of indicators such as correlation of wages and labor productivity, capital-labor ratio and capital-output ratio and volumes of capital investments and periods of their recovery. The latter is particularly important for those republics where orchards and vineyards are cultivated. In practice the effect from vineyards is determined according to current expenditures and no record of capital investments and periods of their recovery is kept. As a result, cases are not uncommon when vineyards are stubbed out long before expenditures for planting them are compensated (more than R6,000 per ha), owing to which thousands of rubles are lost without anyone bearing responsibility for this. Obviously, capital investments for production should be allocated here and log-books for vineyards, which would clearly indicate the period of their utilization, should be drawn up.

Development and implementation of directed comprehensive rayon and zonal (for republics which have no oblasts) programs for the development of agro-industrial production may contribute to solving the task of ensuring optimum combination of territorial and sectorial planning. The decisive word in this important matter belongs to rayon councils for questions of the APK and rayon soviets of people's deputies, which can determine with sufficient accuracy the production potential of farms and set objective plan tasks.

Cost accounting, with whose aid plan tasks are being realized, plays a great role in the economic mechanism. The cost accounting system of the APK, in our opinion, must be improved in the direction of its much closer coordination with forms and methods of economic stimulation, particularly at the level of rayons

and enterprises. At the contemporary stage, the most progressive form of labor organization and wages, promoting such coordination at the level of enterprises, is the collective contract, which is based on the mutual interest of farm management as a client on the one hand and of the collective of an intraorganizational production subdivision as a contractor on the other hand in final production results.

In 1984, 22 percent of production subdivisions worked according to collective contracts in Moldavia. This form of labor organization and stimulation has already been used for many years on some farms, and the experience accumulated by them confirms its unquestionable advantage over the usual forms.

It seems to us that work of subdivisions according to contract would be more effective if all links and functional services were materially responsible for final activity results of brigades and farms as a whole and wages depended on labor results. Under the presently existing order of subdivisions shifting to contract, the system of wages is changed only for a contract collective, but remains unchanged for specialists. The latter retain a fixed wage rate regardless of plan fulfillment and because of this they do not always render proper assistance to contract collectives. Consequently, it is necessary to make the level of wages for supervisors and specialists directly dependent on the quality and quantity of produced output so that the principle of economic incentive applies to every worker individually and to the collective as a whole.

Of particular importance is spreading new cost accounting relations on the basis of collective forms of labor organization and stimulation to all participants in agro-industrial production, that is shifting organizations which provide services to agriculture to contract brigade method of work and closely coordinating appraising indicators of their activity with production results of farms and enterprises which are linked with them.

Optimization of the organizational structure of complex management at all levels is also included in the improvement of economic mechanism of the APK. The resolution of the CPSU Central Committee "On Work of the Moldavian Communist Party Central Committee in Improving the Style and Methods of Activity of Party Organizations in the Light of Decisions of the November (1982) Plenum of the CPSU Central Committee" particularly noted the necessity of improving management of agriculture and other sectors of the APK. In fulfilling this resolution, the Moldavian Communist Party Central Committee has adopted additional measures aimed at further improving the management structure of the agro-industrial complex and simplifying and reducing management. Specifically, some intermediate links were abolished, functions of some management organs were streamlined and individual structural subdivisions were combined into larger ones. Thus, 19 interfarm formations in the system of the Moldavian SSR Council of Kolkhozes were abolished and organizations of the Kolkhoztrans [not further identified], tobacco production associations and others were eliminated in some rayons. Fifty complexes engaged in beef production and raising of non-calving young cows were turned over to fodder production associations. Management staffs in the center as well as in local areas were reduced by 10 percent. But this is only the beginning of extensive systematic work.

More independence in solving economic questions was granted directly to kolkhozes, sovkhoses, sovkhoses-plants and interfarm enterprises. However, some APK management problems remain unsolved. Measures aimed at reducing management personnel, eliminating duplicating links, removing parallelism in work and further improving economic interrelations between sectorial subdivisions of the APK are not being implemented efficiently enough and manifestations of localistic tendencies and departmentalism have not been eradicated.

Achieving optimization of the organizational management structure of the republic's APK should be promoted by stepped up work in rayons of the councils for questions of the APK, by raising their role in solving rayon-wide tasks and by coordinating the activity of sovkhoses-plants, interfarm enterprises and associations operating in rayons. The problems of improving the style and methods of supervision in ministries and departments and of encouraging efficiency and initiative of supervisory personnel remain extremely pressing.

The effectiveness of economic mechanism of the APK is reflected in the economic efficiency of agro-industrial production. At the 26th CPSU Congress and at the May (1982) and subsequent plenums of the CPSU Central Committee the emphasis was placed on raising economic efficiency in all spheres of the APK with maximum orientation toward the final result. However, the existing system of methods for planning and appraising economic efficiency of production in integrated formations provides only for intermediate results as well as for recalculation.

Since the APK represents a unified complex of spheres which are a part of it, the appraisal of its economic efficiency must also be made comprehensively. In contemporary agro-industrial formations it is now already necessary to determine economic efficiency according to the final result as a difference between the value of final production and expenditures for its production, processing and marketing, and then calculate the remaining economic indicators.

It is expedient to define economic efficiency of production and utilization of equipment as a ratio of utilization results to expenditures on its production, delivery, repair and use. In practice the aforementioned results will be made up of volumes of agricultural production obtained through the use of this equipment, and the expenditures--of expenses on its production, utilization and maintenance. After determining the amount of profits, it is easy to calculate the remaining resultant indicators of production and utilization of equipment: capital-output ratio, period of recovery, additional net income obtained through the use of the given equipment calculated per R1 of production capital and others.

This approach to determining economic efficiency makes it possible to adopt strategic decisions on development of the APK, proceeding not from departmental but national economic interests. However, this method does not deny the soundness of existing sectorial methods for appraising production efficiency in the APK, the use of which contributes to the solution of intrasectorial problems and to spelling out the given approach more precisely.

The use of integral methods of determining production efficiency in the APK will require improvement of distributing relationships in all spheres of the complex and emerge as an important factor in solving not only economic but social problems as well. Elimination of recalculation will make it possible to determine the real contribution made by each sphere of the APK to total social product, to uncover bottlenecks and to develop a system of measures for removing them.

Maneuvering the means of centralized funds in the APK at the rayon level and concentrating them on main directions are of important significance for development of the APK. It is necessary that a council for questions of a rayon APK would independently solve questions of concentration, distribution and utilization of material and technical resources proceeding from the interests of a rayon. Without this it will be unable to exercise the rights granted to it. A decision of this council with regard to funds must be a law for all partners regardless of departmental jurisdiction and hierarchy of the management system.

Thus, comprehensive improvement of the economic mechanism of a regional APK is accomplished on the basis of scientific directed rayon, zonal and republic planning proceeding from: economic appraisal of land and the entire production potential of farms and enterprises; improvement of plan indicators; flexible policy of state purchasing prices; development of cost accounting relations on the basis of utilization of collective forms of labor organization and stimulation; and introduction of leading systems of management of agro-industrial production.

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AGRO-ECONOMICS AND ORGANIZATION

MEASURING EFFECTIVENESS OF NEW TECHNOLOGY IN AGRICULTURE

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/Article/ by V. Domanskiy, candidate of economic sciences, department head in the Administration of Agricultural Statistics of the USSR Central Statistical Administration: "Scientific-Technical Progress in Agriculture and Statistical Problems"/

/Text/ At the present time, the organs of state statistics have various types of information at their disposal describing the various aspects of scientific-technical progress and its effect upon agricultural economics. In carrying out the decisions of the 26th party congress and subsequent plenums of the CPSU Central Committee, the statistical organs are constantly improving the quality and efficiency of accounting and statistics and they are implementing improvements in accounting documentation and reporting in all elements of the agroindustrial complex, in conformity with the requirements for administering, planning and analyzing agricultural production.

The organs of state statistics are carrying out systematic work aimed at improving statistical reporting associated with the introduction of new equipment, progressive technologies and methods and also the systems of indicators for describing the technical level of agricultural production and the methodology for determining the economic effectiveness of scientific-technical progress in agriculture. During the years of the current five-year plan, a number of measures were carried out aimed at further improving the indicators for statistical reporting on the technical equipping of agriculture, the mechanization of operations in farming and livestock husbandry, the quality of agricultural products, the effectiveness of use of capabilities for the production of livestock products and the use of equipment, a study of the reasons for insufficient use of machines and equipment, all-round mechanization in the cultivation of the principal agricultural crops and the service life for agricultural machines at kolkhozes and sovkhozes.

A considerable expansion has taken place in economic work with regard to analyzing those problems concerned with the production, delivery, availability and use of agricultural equipment, the technical re-equipping of livestock husbandry, the effectiveness of use of fixed capital and production capabilities, the development of electrification of agricultural production, the work of livestock husbandry complexes, the use of irrigated and drained lands, support for agriculture in the form of warehouses and storehouses and other problems

associated with studying the influence of scientific-technical progress on the effectiveness of agriculture.

The increasing volumes of agricultural production and the tasks for developing the branch in the future, as set forth in the USSR Food Program, require the accelerated introduction into production of the achievements of scientific-technical progress, the essence of which, taking into account the specific nature of agriculture and its link with natural factors, consists of preserving and multiplying the productive forces of nature. Improvements in the fertility of the land and in the productivity of the agricultural animals are of decisive importance for accelerating scientific-technical progress, as components for the technical, economic, social and organizational measures for developing the productive forces. In the decisions handed down during the 26th party congress and subsequent plenums of the CPSU Central Committee, scientific-technical progress is viewed as being just such a totality of factors.

Scientific-technical progress in agriculture is based upon a definite material foundation, for the creation of which the state and kolkhozes make tremendous capital investments and direct the fixed productive capital. During the years of the 11th Five-Year Plan, the volume of capital investments for agricultural development, for the country's national economy on the whole, amounted to almost one third. The branches which were supplying the rural areas with the means of production developed simultaneously.

Scientific-technical progress in agriculture can achieve complete development only if a complex of measures is carried out directed towards ensuring the mechanization of agricultural production and its technical re-equipping, the use of chemical processes and extensive land reclamation operations. In conformity with the decisions handed down during the 26th party congress and the November (1982) and June (1983) plenums of the CPSU Central Committee, concerned with raising labor productivity in agriculture, all of the principal trends in scientific-technical progress in kolkhoz-sovkhoz production have undergone further development. The decree of the CPSU Central Committee and the USSR Council of Ministers entitled "Measures for Accelerating Scientific-Technical Progress in the National Economy" is promoting more extensive use of the achievements of science, engineering and leading experience in branches of the agroindustrial complex. Use of the economic and scientific-technical potential for solving the large-scale tasks of the USSR Food Program made it possible to develop successfully the modern branches of the agroindustrial industry and the biological, technical and economic sciences. As a result, new and highly productive agricultural crop varieties and animal strains were developed, more productive and economic means for mechanizing production were created and new industrial technologies, scientific forms for organizing labor and improvements in the administration and control mechanism were developed. The introduction into operations of achievements of scientific-technical progress ensured a further intensification in the production of agricultural products, improvements in the quality of the products and the thrifty use of material, energy-producing and other resources allocated for agricultural development.

The further use of chemical processes in agriculture is providing large reserves for increasing the production volumes for agricultural products. The USSR Food Program calls for agriculture to be supplied with 26.5 million tons of mineral fertilizers in 1985 (compared to 18.8 million tons in 1980), in 1990 --

30-32 million tons (in a conversion for 100 percent nutrient content) and chemical additives -- 950,000 tons and 1.2 million tons respectively. Measures will be carried out aimed at improving the quality of the mineral fertilizers. The production of highly concentrated and complex fertilizers will amount to not less than 90 percent of the overall volume of fertilizers being produced. The plans call for increases to take place in the production of liquid complex fertilizers and in the deliveries to agriculture of chemical means for protecting plants and herbicides. The logistical base for the use of chemical processes has been strengthened in recent years. At kolkhozes, sovkhozes and production associations of Soyuzselkhozkhimiya, an expansion has taken place in the storehouse facilities for the storing of fertilizers and in manure storehouses and the capabilities of technical servicing points for machines have been increased. The responsibility of the agrochemical service for the effective use of mineral fertilizers and other chemical means and for introducing the achievements of science, engineering and leading experience into agricultural production has been raised.

A further improvement in the role played by land reclamation operations constitutes a powerful reserve for increasing the production of agricultural products. In view of the national importance of further expanding the scales of agricultural construction work and improving its organization, the October (1984) Plenum of the CPSU Central Committee adopted a long-term program for land reclamation and for raising the effectiveness of use of reclaimed lands, in the interest of achieving a stable increase in the country's food fund. The program calls for the carrying out of large-scale all-round measures directed towards the effective use of reclaimed lands, raising the level of land reclamation construction work, the accelerated introduction of progressive irrigation methods, the use of highly effective wide-swath sprinkling units and the use of trickle irrigation and machines and equipment which will ensure the extensive use of energy and resource conserving technologies. The program calls for the area of irrigated and drained land to be increased to 41-44 million hectares by 1990 and to 49-53 million hectares by the year 2000. The implementation of all of these measures will ensure considerable increases in the agricultural crop yields and a substantial increase in the gross yield of grain, vegetables, fruit and forage crops.

In conformity with the measures for further improving state statistics, developed by the USSR CSA using materials of the October (1984) Plenum of the CPSU Central Committee, the organs of state statistics are calling for the preparation of a number of economic reports on the carrying out of the long-term program for land reclamation, raising the effectiveness of use of reclaimed land, the development of land reclamation and agricultural machine building, the carrying out of scientific-technical programs aimed at solving land reclamation problems and so forth. A large amount of methodological work must be carried out in connection with improving the system of indicators that describes the work of irrigation and land reclamation enterprises and the production and delivery of land reclamation equipment to agriculture. A proposal has been made calling for the development of a program for kolkhoz and sovkhoz groupings according to the availability and use of irrigated and drained lands and also a method for computing the return from capital investments in land reclamation. One-time inspections of kolkhozes and sovkhozes will be conducted for the purpose of studying the status of light irrigation and the agricultural VUZ's and technical schools on the question of the use of graduates in the rural areas,

including hydrotechnical amelioration specialists, and a number of statistical handbooks and publications on the development of land reclamation in the USSR have been prepared.

Feed production is presently being raised to a new level from the standpoint of quality and it is being converted over to an industrial basis. At kolkhozes and sovkhozes, a specialized branch nature is being attached to it involving a definite final product and a progressive technology, equipment and labor organization. Radical improvements in feed production are being achieved through concentration in the production of feed, the creation of conditions for the correct procurement and storage of feed, the use of a leading technology and powerful and highly productive equipment and through the correct organization of labor and wages, material incentives, accounting, planning and administration. A scientifically sound feed base for livestock husbandry assumes the creation of long-term cultivated haying and pasture lands and a green production line for ensuring the highest yield of high quality feed per unit of space.

The intensification of agricultural production, based upon a strengthening of its logistical base, is opening up broad opportunities for intensifying production specialization, raising the degree of its concentration and introducing an industrial technology, scientific achievements and leading experience into operational practice. Over the past few years, large-scale livestock husbandry complexes and poultry factories have been created in our country which in terms of their technical equipping and production rhythm are in no way inferior to industrial enterprises. The conversion of livestock husbandry to an industrial basis will introduce positive changes into all elements of its management, it will bring about improvements in the technology for animal maintenance and it will radically change the division of labor among workers.

In the production of livestock products using industrial methods, extensive use is being made of all-round mechanization of all elements of the technological process, including feed production, feed preparation and the issuing of feed to the animals, the hauling of farmyard manure out onto the fields and the utilization of waste scraps. At enterprises engaged in producing livestock products on an industrial basis, new solutions are being found for the problems concerned with the quality of these products.

The construction of livestock complexes for the production of milk, beef and pork, the raising of heifers, sheep raising complexes and poultry factories is promoting improvements in production concentration and the introduction of a leading technology and machine systems which alleviate labor, lower the energy-intensiveness of livestock husbandry output and raise the effectiveness of the branch on the whole.

The poultry factories and livestock complexes are demonstrating a high degree of effectiveness in production specialization and concentration and in converting livestock husbandry over to an industrial basis. In 1984 the dairy complexes obtained an average of 2,893 kilograms of milk per cow, or 20 percent more than that obtained at kolkhozes and sovkhozes; the average daily weight increase during the fattening of cattle reached 615 grams, hogs -- 436 grams, or 30 percent higher. A high level of all-round mechanization of production

processes and use of a progressive technology are making it possible at the complexes to increase the number of cattle being serviced by one worker. The direct labor expenditures per quintal of milk amounted to 5.3 man-hours, or less by a factor of 1.5 than the figure for kolkhozes and sovkhoses; 1 quintal of weight increase in cattle -- 11.5 man-hours, or less by a factor of 4; weight increase in hogs -- 7.8 man-hours, or less by a factor of 3.6. Compared to kolkhozes and sovkhoses, the high level of animal productivity and labor productivity at the complexes is ensuring low production costs for the livestock products and a higher production profitability.

A further increase in livestock husbandry output is largely dependent upon scientific-technical progress in the breeding of valuable animal strains, the genetic potential, correctly balanced feed and good maintenance of which are making it possible to achieve a high productivity. Measures have been carried out in recent years aimed at improving breeding work at the kolkhozes and sovkhoses and strengthening and developing the network of breeding farms and breeding centers. There are presently 1,800 breeding plants and sovkhoses, 9,600 kolkhoz and sovkhos breeding farms and 22 breeding centers in operation throughout the country. These facilities are carrying out work aimed at improving existing and creating new animal strains in dairy and beef cattle husbandry, swine husbandry, sheep raising, poultry production and horse breeding.

The process of inter-enterprise cooperation is continuing in agriculture at the present time. On the one hand, this process is making it possible to increase the number of large enterprises engaged in the intensive production of agricultural products and, on the other, it is making it possible for participating farms to concentrate their material and financial resources. In 1984 the gross agricultural output of the inter-farm enterprises was 1.6 billion rubles; livestock products accounted for 80 percent of the value of this output. Even compared to the specialized production of sovkhoses, the labor productivity at inter-farm livestock enterprises is considerably higher, feed is utilized better, production expenses are lower and the profitability level is higher. In 1984 the inter-farm enterprises for the production of agricultural products earned profits in the amount of 638 million rubles.

The development of the logistical base for the agroindustrial complex is determined to a large degree by scientific-technical progress in agricultural machine building, machine building for livestock husbandry and in feed production. A great amount of work concerned with the development of these branches, carried out following the March (1965) Plenum of the CPSU Central Committee, made it possible to increase the deliveries of machines and equipment to agriculture, to renovate the machine-tractor pool of kolkhozes and sovkhoses and to raise the power-worker ratio for agricultural labor by a factor of 3.6.

As emphasized in the USSR Food Program, the completion (mainly during the period up to 1990) of all-round mechanization in farming and livestock husbandry on a new technical basis is considered to be a priority task.

Improvements are taking place in the technical level, quality and reliability of tractors, combines and other machines and equipment. The USSR Food Program

calls for agriculture to be supplied with 3,740,000 - 3,780,000 tractors, 1,170,000 grain harvesting combines and other agricultural machines, for a total value of 67-70 billion rubles, during the 1981-1990 period. The electrification of kolkhoz-sovkhoz production will undergo further development. At the present time, electric power is being employed extensively in livestock husbandry, feed preparation, in the primary processing of agricultural products and in other processes. In 1990 the consumption of electric power in agriculture throughout the country will increase to 210-235 billion kilowatt hours compared to only 110 billion in 1980. Measures have been outlined for further strengthening the engineering service at kolkhozes and sovkhozes, improving the use and preservation of equipment and for furthering the development of and specialization in the repair-servicing base.

Agriculture will be supplied with the required number of machines for protecting soils against erosion, introducing industrial technologies for the cultivation of agricultural crops, applying fertilizers and plant protective agents and also complexes of machines for the mechanization of operations in livestock husbandry.

However, the achievements in agricultural machine building and machine building for livestock husbandry are still not in keeping with the modern requirements. In the interest of accelerating the creation of a logistical base for the successful implementation of the USSR Food Program, the CPSU Central Committee and the USSR Council of Ministers adopted the decree entitled "Measures for Further Raising the Technical Level and Quality of Machines and Equipment for Agriculture and Improving the Use and Increasing the Production and Deliveries of Such Machines and Equipment During the 1983-1990 Period." The implementation of the complex of measures called for in this decree will make it possible to improve considerably the technical-economic indicators of the machines and equipment being delivered to the kolkhozes and sovkhozes. In particular, the reliability of the equipment and its productivity and service life will be raised and the maintainability of the machines will be raised. The plans call for a planned conversion over to completely mechanized operations and to considerable improvements in the technical level and quality of the machine systems and technological lines. A system of measures must also be implemented directed towards accelerating the creation and mastering of new types of highly effective, long-lasting and productive machines having great service life potential. At the same time, work will be carried out aimed at radically improving the use, repair and storage of equipment in agriculture. The technical re-equipping of agriculture will ensure the conversion over to industrial production methods and to a reduction in labor expenditures.

Scientific-technical progress is having a substantial effect on the structure of the production expenditures of kolkhozes and sovkhozes. Expenses associated with the acquisition and use of logistical resources of industrial origin constitute an ever-increasing portion of the production costs for field crop husbandry and livestock husbandry products. For example, an analysis of the production expenditures per hectare of agricultural land at kolkhozes and sovkhozes has shown that expenditures of an industrial origin constitute the greatest proportion of all material expenditures: for fuel and lubricating materials, mineral fertilizers, industrially produced feed, amortization and repair of fixed productive capital, spare parts and others. During the years of the 11th Five-Year Plan and compared to the 10th Five-Year Plan, these

expenditures per hectare of agricultural land increased by a factor of 1.1 at kolkhozes and amounted to 42 percent of all material expenditures. Scientific-technical progress is ensuring the stability of output production at kolkhozes, sovkhoses and inter-farm agricultural enterprises. Moreover, importance is attached to combining the two aspects of the work of agricultural enterprises -- increasing the material resources used for developing this branch and improving their use. Only if this condition is met will all of the trends in scientific-technical progress in agriculture be capable of ensuring high production effectiveness and growth in the productivity of social labor. The accelerated introduction into agriculture of the achievements of scientific-technical progress will confront the organs of state statistics with the responsible tasks of further improving statistical information and intensifying the analysis of the processes taking place in the development of the branches of the agroindustrial complex.

In this regard, the organs of state statistics are calling for the implementation of a number of measures aimed at improving the programs for statistical groupings of kolkhozes, sovkhoses and inter-farm enterprises that are engaging in specialization and concentration in agricultural production, supplying them with material resources and also qualitative indicators for evaluating the work of the enterprises. The plans also call for an expansion in the use of the selective method for studying the various aspects of scientific-technical progress in agriculture and intensifying control over the carrying out of plans for introducing new and more improved equipment and progressive technologies into agriculture. In the process, special attention is being given to improving statistical observation of the duration of time involved in developing and mastering the production of new equipment and creating new generations of machine systems for agriculture that will be capable of ensuring sharp improvements in the productivity of agricultural labor.

The plans call for an intense statistical study of the processes of agricultural intensification, the effectiveness of chemical processes, the all-round mechanization of production processes and land reclamation operations. A great amount of attention is being given to studying the return from capital investments aimed at developing the branches of the agroindustrial complex, uncovering disproportions in the development of the logistical base for agricultural production and analyzing the completeness of the production expenditures. In the process, the plans call for improvements in the system of indicators which describe the qualitative changes in agriculture, which are taking place as a result of the introduction into production of the achievements of scientific-technical progress, and the carrying out of a great amount of work aimed at improving the methodology and methods for calculating them.

In raising the level of the economic-statistical study of the trends in scientific-technical progress in agriculture, the statistical organs are focusing a maximum amount of attention on developing those questions concerned with uncovering and computing the reserves for growth in the effectiveness of agricultural production, both through better use of the opportunities being provided by scientific-technical progress and by economizing in the use of available resources and reducing overhead expenses and losses.

The effectiveness and quality of statistical information concerned with developing and strengthening the logistical base of agriculture, converting it over to a qualitatively new stage in the extensive use of intensive growth

factors and improvements in the level of agricultural production must conform fully to the increasing requirements for administering and planning the agroindustrial complex.

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AGRO-ECONOMICS AND ORGANIZATION

JURIST EXPLAINS PRIVATE PLOT REGULATIONS IN RESPONSE TO QUERIES

Moscow IZVESTIYA in Russian 31 Jul 85 p 3

/Article: "Private Plots"/

/Text/ We are aware that today the food problem is a key problem. It is obvious that the kolkhozes, sovkhoses and other state and cooperative enterprises and organizations are the principal suppliers of agricultural products. However, such a source as the personal plots of citizens must not be overlooked.

The CPSU Central Committee and the USSR Council of Ministers have underscored the need for making more extensive use of the potential inherent in the private plots; specific measures for promoting their development are set forth in the decrees entitled "The Private Plots of Kolkhoz Members and Manual and Office Workers and Other Citizens and Also Collective Horticulture and Gardening" of 14 September 1977 and "Additional Measures for Increasing the Production of Agricultural Products on the Private Plots of Citizens" of 8 January 1981. A great deal has been accomplished in connection with the carrying out of these decisions. Nevertheless, it must still be confessed that by no means is full use being made of the potential available on the private plots for increasing the production of meat, milk and other agricultural products. This is borne out by the contents of letters sent in to IZVESTIYA.

In this article, Candidate of Legal Sciences V.P. Gordiyenko furnishes answers to questions sent in by readers.

"I took an early pension and returned to my native region. I have my own house and have no special requirement for additional earnings. But I have an urgent desire to work out on the land and to perform some useful work during my free time. I asked the director of the sovkhos to provide me with a sector of land (at least six hundredths of a hectare) and the construction materials needed for establishing a private plot, but my plea was rejected. I was told that the sovkhos had no free land. Thus I must sit on my trousers and do nothing. But perhaps I can still be of use. There are thousands like me."

M. Kovalenko, Cherkassy Oblast

Unfortunately, the sovkhos director was correct from a formal standpoint. In accordance with existing land legislation, only permanent manual and office workers, doctors, teachers and other specialists who work and reside in rural areas have the right to obtain a tract of land, depending upon the availability of free land in the private plot fund.

Tracts of land are made available to manual and office workers, pensioners and invalids who are not associated with agricultural production, providing they reside in rural areas and only if free land is available in the private plot land fund.

However, it should be borne in mind that the area of the private plot fund can be increased in accordance with a petition by the farm leaders. Moreover, the CPSU Central Committee and the USSR Council of Ministers require the party, soviet and economic organs to promote in every possible way the assignment of a private plot to each family permanently residing in the rural areas.

"I live in a settlement of the municipal type and have a small private plot. I would like to acquire a cow. But it turns out that for one reason or another the maintenance of cattle is not authorized for our settlement, despite the fact that in other oblasts cattle are being maintained freely even in settlements larger than ours. Is this possible?"

N. Skorikov, Ryazan Oblast

The question as to whether or not cattle can be maintained is decided in each populated point by the executive committee of the rayon council and solely based upon the existing sanitary conditions. Moreover, the CPSU Central Committee and the USSR Council of Ministers are focusing special attention on unjustified prohibitions against cattle maintenance on the private plots of citizens, if such prohibitions are not based upon sanitary considerations.

"It is an interesting picture -- on the one hand the press and television enjoin all rural residents to develop the private economy and, on the other, the local leaders show almost no interest in providing any support in this regard -- support in the form of action and not just in words. There are 800 farmyards in our village. But there are very few cows. And this is not because the people fear unnecessary concerns, as some tend to believe. No, it is simply that they do not possess real potential for doing so. For example, in the summer there is no place where the cows can graze. And in the winter there is no feed; a hand full of hay is simply not enough here. And the leaders of organizations and institutes (RSU /repair and construction administration/, PMK /mobile mechanized column/ and hospitals) refuse to lend assistance. The settlement's soviet of people's deputies refers to its lack of free land. If these problems are truly unsolvable, then why such loud appeals?"

F. Kuleshov, Krasnodar Kray

It bears mentioning that the questions raised by you are truly solvable. Actually, the Principles of Land Legislation for the USSR and Union Republics (Article 27) calls for permanent manual and office workers, doctors, teachers

and other specialists working and residing in rural areas and also manual and office workers, pensioners and invalids who only reside in the rural areas and who have privately owned livestock, to be provided with tracts of land for the grazing of cattle and for hay-mowing purposes, from the land included in the state reserve, the state forestry fund, cities, settlements of the municipal type, strips of land alongside railroad track and highways and so forth. The presentation of tracts of land is carried out in keeping with the norms established in the legislation of the union republic.

In the absence of such tracts of land for the grazing of livestock, land can be allocated in the established manner from the lands of kolkhozes, sovkhoses and other agricultural enterprises, organizations and institutes, with the land managers being reimbursed by the cattle owners for the expenses incurred in connection with maintaining and improving the tracts of land involved.

Moreover, the agricultural enterprises and organizations, in their production-financial plans, must call for measures aimed at ensuring that the manual and office workers on these farms, pensioners who worked earlier on them and also teachers, doctors and other specialists, all of whom work and reside on the particular farms, are supplied with coarse and succulent feed for their livestock and poultry, the plowing up of the private plots and other measures associated with furnishing assistance in the management of the private economy.

"It seems to me that the development of the private economy has recently taken an unhealthy turn, one which is promoting the rapid enrichment of the new 'owners.'" At times, this calls to mind private enterprise -- what else can it be called? A young man (I recently held a conversation with him at a market where he was trading in veal) bragged that he maintains 5 head of cattle for sale purposes and a cow and two heifers for the family. The sovkhos provides him with pasture area, mixed feed, grain, construction materials and deficit industrial goods and, in addition, he does not pay any taxes. This is a new and progressive form for the management of a private plot. Meanwhile, a speculative price was asked at the market for his veal. What was the result? He manages his private plot at the expense of the state and he puts the money realized from the sale of his products in his own pocket. Is this not true?"

V. Kolesnikov, Belgorod Oblast

You related the entire matter correctly, but unfortunately your evaluations were characterized by a typical legal mistake and this only intensifies the urgent nature of the matters which you touched upon.

Let us examine all of them one by one. First of all, it is radically wrong to place on the same level the activity of a worker and a private owner. The basic difference between them lies in the fact that a private owner, using as a cover state, cooperative or public forms of management, engages in illegal activities for the purpose of obtaining unearned income, that is, he receives compensation either without having to expend any personal socially useful labor (using, for example, borrowed man-power) or which in no way conforms to the amount or quality of the labor expended. Such a worker, or an "owner" as you refer to him, manages a private plot directly by personal labor and under conditions which are strictly defined in existing legislation.

And now -- how does one describe the new form of management for the private plots of citizens? The essence of this form lies in the fact that a citizen, with material, organizational and other types of assistance from state and cooperative organizations, can on a contractual basis increase the production of agricultural products on his own private plot.

However, it is important to be aware of the following:

First. The livestock and poultry maintained on a private plot on the basis of a contract are the property of the kolkhozes, sovkhoses and other agricultural enterprises. A citizen is not authorized to dispose of them (sell, exchange, slaughter and others) without permission from the farm itself.

Second. The feed allocated to citizens for the raising of livestock and poultry on a contractual basis, construction materials, work concerned with the construction and equipping of facilities for the maintenance of livestock and poultry and services for tilling a tract of land and for procuring and selecting the feed are all paid for by the citizens at prices established by competent organs.

Third. Existing legislation (particularly the 29 September 1983 decree of the USSR Council of Ministers entitled "On the Income of Citizens Who Do Not Have To Pay Income Tax) stipulates that the income of manual and office workers, kolkhoz members and other citizens, obtained from the sale of private plot products, is not subject to income tax. The agricultural tax for tracts of land allocated for the raising of forage crops, in accordance with contracts for the purchasing of products from private plots, is not computed.

Fourth. Citizens who raised and sold livestock or poultry to a farm on the basis of a contract are entitled to purchase from such farms up to 20 percent of the weight increase obtained or the products obtained from slaughtering, at the state purchase prices. These products and also the products obtained from the slaughtering of private livestock a citizen is authorized to sell at a kolkhoz market, at prices established only on the basis of demand and supply. Certainly, the sale of such products by a citizen at a market cannot be considered to be speculation.

"At the present time, there is much discussion concerning the raising of livestock and poultry on a contractual basis. Based upon the stories being told, it would appear that this is very profitable work. But there is not a trace of such profit in our village. I would like to know by whom and on what basis can a contract be concluded? And what advantage is to be realized from this?"

K. Gribov, Tambov Oblast

This is a new and, it can be stated directly, mutually advantageous undertaking. Here we have in mind the raising of livestock, poultry and field crop husbandry products, the sale of which is carried out on the basis of a contract between a citizen and any agricultural enterprise. Such a contract is drawn up on a strictly voluntary basis. In terms of its content, this bilateral transaction must conform to the Standard Contract for the raising of livestock and poultry

on the private plots of citizens, with the livestock and poultry belonging to kolkhozes, sovkhoses and other agricultural enterprises (approved by the USSR Ministry of Agriculture, USSR Ministry of Procurements, USSR Ministry of Finances and the USSR CSA on 12 March 1981).

Citizens who concluded contracts for the raising and purchasing of livestock and poultry are entitled to the following privileges:

...they can maintain livestock, in terms of numbers, over and above the established norms for livestock maintenance (the numbers are determined by the parties involved and are recorded in the contracts);

...they can obtain young livestock and poultry stock ahead of schedule;

...on a mandatory basis they are allocated tracts of land for livestock grazing and for haying purposes and, when necessary -- additional tracts of land for the raising of forage crops;

...repayment, at the expense of the farms, up to 50 percent of the credit extended for acquiring cows and heifers;

...on the basis of having concluded contracts with organizations of consumer cooperation, they are authorized to procure (in the form of counter sales) concentrated feed:

...they are provided with monetary advances in the amount of 50 percent of the total amount of a contract for acquiring the agricultural products needed for production, in conformity with the contracts concluded for implements, materials and light mechanized equipment for agricultural operations;

...they are given precedence in purchasing deficit industrial goods and they are the first to receive assistance in the construction of facilities for their privately owned livestock and poultry.

Here it is important to remember one particular factor: a contract for the raising of livestock and poultry may not be concluded with just any citizen, but only with those who permanently reside on the territory of the farm and participate conscientiously in social production, or with pensioners who reside permanently on the territory of the farm.

"I would like to know if any privileges are extended for the management of private plots to young families which have transferred into the rural areas to live?"

Ye. Zhernovaya, Kaluga Oblast

Yes, there are such privileges. For the purpose of raising interest in young families in creating and developing private plots, sovkhoses and other agricultural enterprises and organizations have been authorized to supply them, free of charge and at the expense of the farm, young livestock and also to furnish them with assistance in the construction of farm outbuildings, but on the condition that the members of these families work on the farms involved.

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AGRO-ECONOMICS AND ORGANIZATION

EFFECTIVENESS, POTENTIAL OF KAZAKH RAPO SYSTEM DISCUSSED

Alma-Ata NARODNOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 7, Jul 85 pp 46-48

[Article by L. Shnayderman, assistant professor in the Department of Political Economics at Kazakh State University imeni S.M. Kirov and Candidate of Economic Sciences; G. Iksanov, post-graduate student at Kazakh State University imeni S.M. Kirov: "On A Modern Level"/

[Text] During the 17th Plenum of the Central Committee of the Communist Party of Kazakhstan, in which a discussion took place on the results of the April (1985) Plenum of the CPSU Central Committee and the tasks of the republic party organization with regard to carrying out its decisions and preparing in a worthy manner for the 27th CPSU Congress, the problems associated with implementation of the Food Program were thoroughly analyzed.

For the final year of the five-year plan, the republic has vowed to obtain not less than 29 million tons of grain and to over-fulfill its plan for grain purchases. The country is awaiting a large grain yield in Kazakhstan. The only true path to be followed for achieving high and stable yields -- efficient use of the land, rapid mastering of the zonal systems of farming, the introduction of new and intensive technologies and increased responsibility by the farming personnel for the fate of their crops.

There are still many unsolved problems in livestock husbandry. Throughout the republic, we still have many farms, rayons and even obalsts where this branch is being managed in an unstable manner. Just as in the past, the problem of creating a strong feed base continues to remain acute.

Based upon the aims of the CPSU Central Committee, agricultural production must be converted over in a decisive manner to the path of intensive development. And here a change in the style and methods for directing production operations will play an important and decisive role. As emphasized in a report by member of the Politburo of the CPSU Central Committee and 1st Secretary of the Central Committee of the Communist Party of

Kazakhstan, Comrade D.A. Kunayev, the organs of administration for the republic's agroindustrial complex must eliminate excessive paperwork, furnish practical assistance in the various areas, strengthen discipline and good order in a persistent manner and carry out more and better work aimed at improving the rural economy.

In the management of farm activities, a special role will be played by the RAPO /rayon agroindustrial association/ councils. They must be champions of scientific-technical progress, introduce new technology in a more bold manner, campaign against mismanagement and achieve efficient and profitable work by each enterprise of the agroindustrial complex.

The articles brought to the attention of the readers under the heading "Agroprom /agricultural industry/: Experience and Problems" reveal how use can be made of the potential available to the kolkhozes, sovkhozes, processing enterprises and the new organs of administration for the agroprom, for increasing the production of food goods. In the materials published below, emphasis is placed upon the importance of handling all reserves in a thrifty manner and making efficient use of the available potential.

One method for accomplishing this is to achieve further improvements in the management of the agroindustrial complex. Although a great deal has been accomplished here, nevertheless a considerable amount of work still remains. Under the influence of departmental interests, the rayon and oblast associations quite often are unable to solve properly the problems concerned with the all-round development of agriculture and its associated branches. And the aim of the April (1985) Plenum of the CPSU Central Committee was clearly directed towards ensuring the existence of one master on the land and that the agroindustrial associations bear complete responsibility for the carrying out of the Food Program.

The measures implemented by the party for reorganizing the administration of agriculture and its organically associated branches of industry are already furnishing the initial positive results. However, experience indicates that by no means is full use being made of the opportunities embodied in agro-industrial integration.

The decisive element of the APK /agroindustrial complex/ is a rayon agro-industrial association, which bears the principal workload in the administration of agricultural and its associated industrial, construction, repair and transport production operations and for coordinating their operations in the interest of achieving high results with minimal collective expenditures.

Studies carried out in Alma-Ata and Uralsk oblasts have shown that there are problems the solutions for which are dependent upon more efficient work by the RAPO's. This includes, first of all, the regulation of the branch structure for rayon (especially oblast) agro-industrial associations; secondly,

improvements in the administrative system for them and a substantial improvement in the cost accounting relationships between the agricultural enterprises and their RAPO (OAP0) /oblast agroindustrial association/ partners.

Let us examine certain aspects of these problems.

At the present time, the structure of the Talgarskiy RAPO in Alma-Ata Oblast includes kolkhozes and sovkhozes, spetskhozbyedineniye /specialized farm associations/, veterinary and seed control stations, rayon associations of Selkhoztekhnika, Selkhozkhimiya, Selkhozenergo, rayavtodor, rayon administration for irrigation networks, poultry factory, fruit canning plant, wine plant and alcohol plant of Kazminpishcheprom /Kazakh Ministry of the Food Industry/, a creamery, construction and transport organizations of various departmental affiliations, forestry farm, grain receiving points and elevators.

The structure of the Terektinskiy RAPO in Uralsk Oblast, in addition to similar enterprises and organizations, also includes a raypotrebsoyuz /rayon union of consumer's societies/, gosplemstantsiya /state breeding station/, petroleum bases, road maintenance administration and a technical school.

Thus the structure of the two RAPO's includes enterprises and organizations of more than 15 different ministries and departments (USSR and Kazakh SSR ministries of agriculture, Sel'khoztekhnika, Minvodka /Ministry of Land Reclamation and Water Resources/, Minenergo /Ministry of Power and Electrification/, Minzag /Ministry of Procurement/, Minselstroy /Ministry of Rural Construction/, Minavtodor /Ministry of Highways/, Minavtotrans /Ministry of Motor Transport/, Minpishcheprom /Ministry of the Food Industry/ of the republic, Glavrissovkhozvodstroy, Ministry of the Forestry Industry, Kazpotrebsoyuz /Kazakh Union of Consumer's Societies/ and others).

Under such conditions, a RAPO staff is not capable of providing skilled management for such heterogeneous enterprises or of solving the complicated inter-branch problems which arise in the process.

The situation is complicated substantially by the fact that, owing to dual subordination of the RAPO participants, it is difficult to combine in an optimum manner territorial and branch planning and administration. There are as yet no normative documents available for these questions, documents in which an attempt was made to define the methods for uniform management.

The various enterprises and organizations are subordinate to those organs of administration which possess real opportunities for exerting an effective influence on their production activities -- they establish planning tasks, they handle material and financial resources and they solve problems concerned with the distribution and redistribution of profit, the formation and use of economic incentive funds and so forth.

Quite often some departmental interests not only do not coincide but in fact they are even in conflict with the economic interests of other APK partners. The RAPO's were expected to eliminate such discrepancies. However, they are still not coping with their role in this regard. True, it should be stated in all fairness that the work is proceeding successfully (and we have examples of

this in the republic) in those areas where the RAPO councils are displaying initiative and persistence.

In order to solve more successfully the problem of carrying out improvements in the administration of the agricultural industry, we believe that more rights must be extended to the RAPO councils in the area of price formation, distribution of material and labor resources, capital investment limits, budgetary appropriations and credits.

This wish can be realized only with the aid of a well organized mechanism for interaction. Meanwhile, in the departments for inter-branch contacts for procurements, marketing and processing of agricultural products, in many RAPO's in Uralsk Oblast, there are only 2-3 individuals working and they are not capable of handling the tremendous flow of current information, not to mention the preparation for and solving of problems falling within their competence. Here we do not have in mind increasing the number of RAPO workers and thus attempting to solve the entire complex of inter-branch tasks. The chief means is that of an optimum combination of territorial and branch principles for administering the agroindustrial associations.

Under modern conditions, a decisive prerequisite for further developing production and raising its efficiency is that of developing scientific-technical progress and achieving timely and daily use of its latest developments in economic practice. This task can be solved successfully only if a uniform scientific-technical policy is carried out in an effective manner within the framework of each branch, possessing many specific characteristics. The RAPO councils, the structure of which, as already mentioned, includes enterprises and organizations of various ministries and departments, are incapable of carrying out such work and in its absence it is impossible to manage effectively an agro-industrial association.

In this regard, it appears feasible to us to carry out agroindustrial integration at the rayon and oblast level by stages, gradually expanding the circle of enterprises and organizations included in a RAPO (OAPO) structure -- to the degree that the necessary objective and subjective prerequisites will be created for this purpose.

During the first stage, it makes sense to include in the structure of a RAPO (in addition to sovkhozes and kolkhozes) enterprises of Selkhoztekhnika, Selkhozkhimiya, Minvodkhoz, Minavtodor (engaged in the construction and operation of local roads) and also certain inter-departmental construction and transport organizations.

A structural reorganization will make it possible to exert an influence on agriculture and on its associated service and auxiliary production efforts. It will be easier to solve problems concerned with the sale of products, land reclamation, agrochemical services for sovkhozes and kolkhozes, their logistical supply, the repair of agricultural equipment, the construction of production buildings and installations and transport trans-shipments.

This is especially needed (as borne out by experience already available in the country) in view of the fact that unified inter-departmental services should ideally be created within the framework of a rayon agroindustrial association:

engineering, transport, repair, construction, logistical supply, dispatcher and so forth, which for all practical purposes are oriented towards the final results of agricultural production.

Exceptional importance is being attached to further improving the cost accounting relationships among partners of agroindustrial associations.

This is borne out by the results of studies carried out in Uralsk Oblast. To the question: is the presently existing system of cost accounting relationships among RAPO partners an efficient one? -- the overwhelming majority of specialists interrogated (90.6 percent) replied in the negative.

The inconsistencies within the system of economic interests of partners in an agroindustrial association have still not been eliminated; the absence of an effective mechanism for the material responsibility of enterprises and organizations for the non-fulfillment or untimely fulfillment of contractual obligations and planned tasks; the largely incomplete system for the principal and incentive wages of workers.

The centralized funds for economic stimulation created in RAPO's are intended for their successful functioning. Ideally, resources must be concentrated in those areas where they are especially needed: for the construction of projects the erection of which is beyond the capability of individual enterprises. These funds could level off the economic conditions of farms and solve many other inter-branch tasks.

In accordance with the Standard Statute for a RAPO and the statute dealing with the formation and use of the centralized funds of a rayon agroindustrial association, they are created by means of withholdings from the enterprises and organizations belonging to the RAPO. Specific problems relating to the formation and use of the funds are solved by the RAPO itself. And experience has shown that quite often this is not done in the best possible manner, since up until now no clear information has been provided on the indicators, amounts, sources or methods for the participation of enterprises and organizations of different departmental affiliations in the creation of such funds.

In this regard, attention is drawn to the operational experience of the Estonian RAPO's, particularly the Vilyandiskiy RAPO. Here the withholdings for the centralized funds are obtained from the profits of the RAPO participants. The computation is based upon the normative coefficient for objective management conditions, computed for each subunit, and it takes into account an evaluation of the land worked, support in the form of productive capital and man-power, the use of mineral fertilizers and specialization.

Farms which operate under the best conditions pay larger amounts into the centralized funds. At the same time, no withholdings are made from additional income obtained over and above the normative profits.

Here is still another example: in the Makharadzevskiy RAPO in Georgia, the funds are formed by means of withholdings from similar funds for all RAPO participants in the amount of 15-20 percent. The specific mechanism for using centralized funds for economic stimulation differs in various regions of the country.

The carrying out of improvements in the operational style and methods of administrative staffs at the rayon, oblast and republic levels is a complicated task and one which requires unhurried discussion and scientific substantiation. But the chief aim is of basic importance -- the APK must be planned, financed and administered as a single entity at all levels. This is a demand of the times.

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AGRO-ECONOMICS AND ORGANIZATION

TSENTROSOYUZ CHIEF ADVANCES PRIVATE PLOT PRODUCTION SALES

Moscow PRAVDA in Russian 6 Aug 85 p 2

[Interview with M. P. Trunov, board chairman, Tsentrosoyuz [Central Union of Consumer Societies] by V. Brovkin, correspondent, date and place not specified: "From the Private Plot"]

[Text] Summer is in full swing. On the private plots of rural dwellers in many republics and oblasts a fairly good harvest of apples, pears, plums and peaches is ripening, while potato and vegetable picking time is on the way. Those desiring to sell surpluses turn to consumer cooperative procurement points. However, they are not always friendly to suppliers. The editors receive letters saying that for various reasons, cooperators still frequently refuse to accept output from private plots. This is the subject of an interview between our correspondent and M. P. Trunov, board chairman of Tsentrosoyuz.

[Question] Mikhail Petrovich, how do you assess such facts?

[Answer] Our task is to maximize the purchase of output from private operations. This is a vital concern for consumer cooperatives. Any shortcomings here are intolerable. Last year about 5 billion rubles worth of agricultural products were received from the population. Was this enough? Looking back, over four years of the five-year plan, purchases increased by almost one-third. However, there are sizable reserves. Only 30 percent of the fruit which the population wanted to sell was purchased, for vegetables the figure was 52 percent and for potatoes -- 45 percent.

[Question] What is hindering you from going to each household and accepting all surplus harvest from each private plot?

[Answer] The hinderance is many manager's mental inertia and inflexibility. Where they are seriously involved with this question, one does not hear any complaints about cooperators. For example, a wide network of receiving and procurement points has been set up in in all rayons in Vinnitsa Oblast. There are well stocked produce stores in cities and settlements. Agricultural products are purchased at contracted prices. Total annual sales are more than

60 million rubles, this is 14 percent of food sales. Cooperative industrial and food service enterprises produce more than 125 million rubles worth of assorted food products.

However, this level of organization has by no means been attained everywhere. The material technical base and cooperator's work with the local population is poorly developed at a number of oblasts in Kazakhstan. In the Chuvash ASSR, Perm, Amur, Volgograd and Kostroma oblasts, many private plots remain outside cooperators' purview. Managers at a number of oblast consumers unions have a work style which consists of "dislodging" more food stocks from the center. They don't think about how they must first of all use reserves to increase local sales turnover. This is no way to work.

Increases in purchase volume depend to a great extent upon the material-technical base. It is essential to have a widespread network of receiving and procurement points as close as possible to production areas. Major steps forward are planned here. While at the beginning of the five-year plan we had only a little more than 1,700 points, by the end there will be about 17,500. Moreover, these points are general purpose, designed for receiving various types of agricultural products: fruit, potatoes, vegetables, meat, poultry, wild fruits, berries and mushrooms. Equipped with cold storage facilities, they make it possible to store and ship high quality output.

However, stationary general purpose points do not solve all problems. After all, we are dealing with 34 million private operations. Therefore, during the mass procurement season we open up to 70,000 temporary points and 5,000 store-points in garden-orchard associations.

It is essential to go even further, into the hinterlands, which can provide a sizable share of foodstuffs. We sometimes do not succeed in doing this. The basic reason is a shortage of motor vehicles, especially light weight specialized vehicles with good cross country capabilities.

As studies show, completely supplying cooperatives with mobile receiving and procurement points and specialized vehicles would make it possible to purchase a billion rubles worth of additional agricultural and natural products.

Many of the goods offered by the population cannot be delivered fresh to customers. This means that processing must be expanded. We have sufficient numbers of medium and large sized canning plants, but they have been in operation for 20 years and more. Workers are being sent out to modernize them. In addition, we have begun to build small capacity plants for the on-the-spot processing of perishable output and output which cannot be transported during the procurement season.

[Question] You used the words "work poorly with the population." What does it mean to work well?

[Answer] This is not agitation by word, but mainly, by deed: specific help to the population. Year after year consumer cooperatives are increasing their sales of construction materials, hotframes and greenhouses, plant protection

agents, fertilizers and garden-orchard equipment. Small scale equipment is beginning to enter the trade system. There are expansions in the "House-Garden-Orchard" and "For the Private Plot" network of specialized stores.

It is necessary to give rural dwellers an incentive to collaborate with cooperative organizations. Last year our workers visited 18.6 million households and signed 11 million product delivery contracts. First of all, these people should be sold feed, assisted in buying young livestock and supplied with packages and transportation. We are also moving towards providing them with money advances. We have specialized material incentives funds for the most active suppliers.

However, there has not been universal success in giving contractual authority to help in supplying them with feed and young animals. There are still not enough concentrated feeds. Also, local organs often decide to use them for other than intended purposes. Kolkhozes and sovkhoses are not given enough suckling pigs for feeding at private operations.

Or, take this problem. There is no end to complaints about cooperative organizations refusing to accept apples from the population. Cooperatives annually purchase about one million tons. However, all apples are not the same. More than 60 percent are third grade and substandard. We primarily make wine from them, as they are not suitable for high quality canned goods, preserves, compote and juice.

The production of fruit and apple wine by consumer cooperatives is being sharply curtailed and will be completely eliminated by 1988. We can process some low quality fruit into fruit butter, puree, unfiltered juice and dried fruit. Table grapes should be purchased in unlimited amounts, but as far as processing grade and purely wine grapes are concerned, only large ones in public demand should be purchased. What should be done with the remaining fruit?

Cooperators should give people explanations and enticements to change the planting structure at private plots. This has long been a problem. About half of the orchards planted in the Central, Central-Chernozem and Volga regions of the RSFSR, the Baltic regions and a number of oblasts in the Ukraine and Belorussia were planted in the 1950's. A sizable share are early ripening varieties with poor keeping qualities. What is needed are seeds and seedlings bearing fruit suitable for long term storage and processing and which hold up during transport. This would help improve fresh fruit supplies in the years ahead.

[Question] Many readers write to PRAVDA about high prices at markets. As is known, by locating extensively at bazaars, consumer cooperatives can influence prices.

[Answer] Yes, and there are several good examples of this. In Ufa, Kazan, Dnepropetrovsk, Lvov and Stavropol, cooperative trade has a noticeable influence upon stabilizing prices during the procurement season for many kinds of agricultural products. They are traded at markets for lower prices.

Widespread consumer cooperative trade in meat at a number of oblast centers and rayons has had a considerable effect. In the last 4 years meat sales have increased 2 fold. Nationwide, in 1984 the public only purchased 3.4 percent of its meat products at markets. The remaining 96.6 percent was sold through state and cooperative trade. This undoubtedly has a stabilizing effect upon market prices.

There is still much to do in produce trade. In 1984 we purchased 4 million tons of potatoes and 3.2 million tons of produce from private plots and garden and orchard associations. These purchases were for state trade, the processing industry and our own needs. Following plans approved by local soviets, the cooperative stores in cities sold 300,000 tons of potatoes, 565,000 tons of vegetables and 430,000 tons of fruit. This is not enough. In Central Asian republics, for example, no provisions at all were made for allocating potatoes, fruit and vegetables for urban cooperative trade. It appears that cooperators must be allocated more resources for year around trade. They, in their turn, must take products to the market.

We are presenting cooperators the task of maximizing the increase in purchases from private operations and through this considerably increasing the trade turnover. By the end of the year it is intended to purchase and sell in retail trade 165,000 tons of fruit and 85,000 tons of grapes in addition to approved plans. More than 180 million rubles will be taken in from these sales. By increasing meat purchases from the population 70,000 tons and processing it at our own enterprises and those of the USSR Ministry of the Meat and Dairy Industry it will be possible to offer citizens an additional 200 million rubles worth of sausages and cured meats.

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AGRO-ECONOMICS AND ORGANIZATION

READER OPINION ON USE OF HORSES, MINI-TRACTORS ON PRIVATE PLOTS

Moscow SELSKAYA NOV in Russian No 6, Jun 85 pp 18-19

[Reader correspondence: "It's Hard without the Animals," "The Private Plot: For the Individual and for Society"]

[Excerpts] What is being done and what needs to be done to make work easier on the private plot? This question has been widely discussed in the press, as well as in SELSKAYA NOV, which has dealt with it on a number of occasions. But the letters to the editors keep coming with questions, advice, criticism and ideas. As it happens, these letters reflect the debate raging on the question of whether the horse or the minitractor is to be preferred: some hold forth for the minitractor, others come out passionately for the horse.

We are publishing some of these letters today along with replies from officials involved in providing material and technical support for private plot operations.

At the outset, however, let us remind our readers of what the January 8, 1981 CPSU Central Committee and USSR Council of Ministers decree, "Additional Measures to Increase Agricultural Production on the Private Plots," has to say on this subject. It proposes that "...in drafts of annual plans for the economic and social development of the USSR (USSR Gosplan) set annual targets for union republic councils of ministers and union-level ministries and departments for fruit and vegetable production and the manufacture of small equipment in terms of product mix and the volumes required to satisfy demand." At the same time it recommends that "kolkhozes, sovkhoses and other agricultural enterprises keep on hand enough horses or other draft animals ... to work the private plots, prepare and deliver feed, transport production and meet other needs associated with the operation of the private plot."

So as we can see, this decree calls for the use of all means of easing the work load on the private plot and of increasing the efficiency of private plot operations. And as far as the question of the motor versus the animals is concerned, it would be difficult for the farmer to get along without either one of them. The mail the editors receive will naturally reflect this.

...But the Horse is Better!

We see more and more reports that industry and the experts are developing minitractors and different types of small equipment. The problem is that work on

the development and manufacture of this small equipment has been under way for years now. And how they are needed! Millions of families maintain a private plot.

In the meantime, the most "enterprising" of these families are using equipment that belongs to the state: they can plow their vegetable gardens at no expense, while others can get theirs done for the price of a bottle of vodka or two, depending on the size of the garden. Or you can plant your potatoes with a potato planter, again for "peanuts." If you want to haul some feed, fertilizer or fuel or get your produce to the store or to market, once again, all you have to do is be willing to shell out a little. It's not only the gardeners who take the losses here. For the fact is that people are doing all these things with state or kolkhoz equipment and fuel.

But not everybody can afford these minimachines—they're just too expensive. And on top of that it's hard to get them repaired and find spare parts for them.

I think that in the heat of this argument over small equipment we have been ignoring the "one-horsepower tractor"—the horse itself.

No, the horse has not lost its importance in this age of technological progress. The farmers still use it. From the milk of the mare we make a wholesome drink—koumiss. Plasma from its blood is used to make biologicals for the fight against serious and dangerous diseases in man and animals. And on the private plot it is simply irreplaceable.

Just think: there is not a single horse in any of the seven villages around here. People are doing everything either by hand or for a drink or two. But how necessary a horse is to a farmer not only for working his garden, but also to bring in fuel, feed etc. And then wouldn't you say he needs a horse when the roads are bad in the spring and the snow comes in the winter? How, if not by horse, is he going to get a sick person to the hospital, the children to school and his excess production to market or the into the stores?!

So we are left with the question of why it is that citizens have the right to small equipment and cars for their own personal use but they can't always get permission to have a horse for their own use?

A work horse doesn't cost much, it requires no fuel and gives a return in fertilizer (10 tons a year). We need to legalize the sale of horses to citizens for their own private use. They do work and provide a meat reserve at the same time.

Naturally, though, the horse should not become the primary source of income for its owners. This can be controlled.

For those citizens who would not be in a position to buy a horse of their own we should set up rental centers on kolkhozes and sovkhoses and in other organizations.

At the same time, of course, we will also have to give thought to the production of carts, harnesses, plows, harrows, shoes and nails.

Rephrasing the words of the reindeer herders' song we could say: "The little tractor's alright, but the horse is better!"

Aleksandr Georgiyevich Korol'kov
retired blacksmith
Ryabkino, Ryazan' Oblast

Let's Switch to Horses...

To the question of whether there ought to be horses on the farm or not the answer, I think, is clear. Many of my villagers would rather have a horse, and this is better than buying a little tractor. Without mentioning the many other economic benefits to be derived from the horse, we should be thinking about the gasoline we could save.

We haven't worked the private plots at all around here for the last two years now. But back when they used to send in the tractor operators to work the private plots in the fall, each farmer would pay him three rubles or bring out a bottle. It's not hard to imagine this "benefactor" with his alcohol-glazed eyes cutting a swath through the fences and trees in executing his now overly clever turns. To get straw and grain in from the threshing floor or then to transport the grain to the mill to have it ground into flour you had to take your case all the way to the top and beg the man or turn once again to your "benefactor."

Every one of the specialists on our farm has a car. You'll see Nivas and Moskviches zipping around all over the place. Just think of all the gasoline we're using up!

Now if you had a horse you could make your rounds of the fields at a more leisurely pace, and you'd have time to chit-chat a little with the farmers. Otherwise, here's the agronomist zipping around like a meteor—if you're lucky, you'll be able to get a glimpse of him.

I am certain that we're going to have to take steps to start raising more horses and allow every farmer that wants one to have one.

If he had a horse, the farmer would not have to go running to the chairman for every little trivial thing. He would be able to go get what he needed himself and to work his own private plot. The water carrier would be bringing in the water by horse and not in a Vladimirets! Let's all give some serious thought to this problem!

N. S. Skakunov
Politotdel'skoye,
M-Kurganskiy Rayon,
Rostov Oblast

Waiting for the New Equipment

...Way back as early as 1981, the "Private Plot" supplement to your magazine reported that production of new machines was getting under way in Kutaisi. So I contacted the plant to find out how you went about getting one. I was told that

these machines just hadn't panned out and that a new one was under development which would go into production in 1984. So who knows when anybody who wants one will ever see one!

The years go by faster than people can fulfill their promises, and as the years go by old peasants like us aren't getting any stronger. We just don't need any more of these interminable discussions about this new small equipment. So what I think we need to do is to look for other, tried and true methods of making the work we do on the private plots easier.

I recall that back in the early 1930's we had team-drawn plows which were made in Chelyabinsk. My mother and father harvested the rye with a sickle, while I plowed the field to get it ready to plant the rye. And what good plows these were!

These horse-drawn plows were what the peasants of our village brought into the kolkhoz and used every year to do all their fall plowing.

But all this is just an example I refer to in passing. The horse, of course, is no longer going to replace the tractor in the kolkhoz field. But when it comes to the private plot, the horse is certainly going to be healthy competition.

I think we need to give attention to the idea of putting the horse-drawn team plow back into production—this would be a big help to the people in our villages. The number of plows we need shouldn't be all that hard to figure out, what with the fact that the record will tell us how much land we have in the private plots.

A. T. Zaykin
Kuyezbash,
Aurgazinskiy Rayon,
Bashkir ASSR

The officials reply

Responding to the letter from A. G. Korol'kov is V. V. Chernyshov, chief of the horse-breeding administration of the RSFSR ministry of agriculture.

The writer of this letter makes a mistake when he holds the horse up against the small machines.

At the same time, however, this letter does offer a valid evaluation of the role of our horse-breeding program under present-day conditions. The writer is quite right to point out that good-quality horses are in fact essential to agricultural production, sports and the effort to meet raw material requirements in the food, medical and biologicals industries.

At the beginning of the current five-year plan there were some 5.6 million horses on the country's farms, with draft horses accounting for about half of these. These horses were doing a great deal of the work in our agricultural sector. In much of this work the horse is indispensable.

The experience of the leading farms in the Bashkir ASSR, Stavropol and Krasnodar krais and Rostov, Belgorod and other oblasts demonstrates convincingly the economic efficiency and operational advantages to be derived from the use of horses in a great many agricultural operations formerly performed by tractors and trucks. On Uralskiy Sovkhoz in Orenburg Oblast, for example, the people running the livestock operations are using not motor vehicles, but draft horses, which is making it possible for them to save substantial amounts of fuel and lubricant.

The RSFSR ministry of agriculture, local agricultural authorities and individual kolkhozes and sovkhozes are taking steps to improve the use to which we are putting horses in transport and agricultural operations. It should be pointed out, however, that this effort is encountering obstacles in the form of unsatisfactory supplies of wagons and harnesses for use on the farms. Nor is industry meeting kolkhoz and sovkhoz demand for horse-drawn implements and cavalry- and cossack-style saddles. The quality of the carts and wagons, the implements, horseshoes and the horseshoe nails remains low. There are also shortcomings in the organization of supplies of these items to the farms; many farms are not submitting their requests on schedule.

There is no doubt that draft animals should be employed much more extensively on the private plots worked by our kolkhoz farmers and sovkhoz workers. Gardens can be cultivated, feed brought in, the harvest transported and many other jobs on the farm can be done much more efficiently by a horse. This is what we are seeing on many of the leading farms throughout Russia. Unfortunately, however, there are cases in which heavy equipment is still being used in these operations.

Most of the horses in the RSFSR are concentrated on the kolkhozes and sovkhozes and in our interfarm enterprises. Some 153,000 horses are privately owned. The ministry of agriculture and the central press continue to receive letters and applications from people who want to buy a horse for their own private use. It must be remembered in this connection that according to the ukase of the presidium of the RSFSR supreme soviet of August 6, 1982, rural residents, not members of kolkhozes, are permitted to have one draft horse for their own personal use. Authority to resolve this question has been granted to the executive committees of rayon and city councils of people's deputies.

Replying to the letter from N. S. Skakun is A. S. Kotov, senior livestock specialist with the USSR ministry of agriculture's main administration of horse breeding and stud farms.

The questions raised in this letter concerning the importance of horse breeding for the national economy are timely ones. Failure to attach due significance to the role of draft horses, particularly in agricultural production operations, has created a number of situations in which heavy equipment is being used inefficiently and petroleum products are being wasted and made it difficult to meet the requirements of farmers working private plots.

In April 1981 the CPSU Central Committee and the USSR Council of Ministers issued a decree outlining steps to be taken to improve our horse-breeding program. The period since then has seen things take a turn for the better in this area.

While we used to see substantial annual drops in our horse population, the numbers have started to turn around in the last few years. The increase has already reached some 150,000. And the number of new colts has risen dramatically.

The question of the maintenance of horses for personal use will be resolved in each union republic on the basis of the local circumstances. In a number of our Central Asian republics and the Transcaucasus horses are being purchased and maintained for personal use just like any other domestic animal.

Many kolkhozes and sovkhoses have already established an intelligent, economically advantageous combination of mechanized equipment and draft horse-power. But unfortunately, this hasn't always been the case, so we are undertaking additional measures to improve the state of affairs in this important area.

In connection with the questions raised in the letter from A. T. Zaykin, G. N. Badalov, head of the USSR ministry of tractor and agricultural machine building's Soyuzselkhoztraktor Production Association, writes the following:

The ministry of agricultural machine building is taking steps to increase production of the MTZ-05 at the Minsk Tractor Works. The 1984 plan called for the production of 3000 of these machines. This target was met and slightly exceeded. The Minsk Tractor Works has been allocated the resources necessary to expand its production of the machine. As deliveries of engines from the USSR ministry of the automotive industry's Petropavlovsk Small Engine Works increase, we will also see an increase in our production of the MTZ-05

We are also working to increase capacities for production of the Super-600 with a 5-7-HP engine and a complement of agricultural implements by the Gruzselmash association. The ministry of agricultural machine building is also taking steps to accelerate the development of production facilities and plans for the association to begin making the new machines. Last year, 1984, saw production of 1932 Super-600's.

Plans also call for the organization during the period 1983-1990 of production of machines with a 5-HP engine and a set of agricultural implements and cultivators with a 3-HP engine and a set of implements in enterprises of the aviation industry. Last year saw these enterprises turn some 8000 of the 5-HP units over to the marketing system along with over 3000 of the cultivator sets.

Similar replies have been received from the Main Administration of Hardware and Produce Merchandising of the Central Union of Consumer Societies and the Main Administration of Subsidiary Enterprises and Businesses and Subsidiary and Private Farming of the USSR Ministry of Agriculture.

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AGRO-ECONOMICS AND ORGANIZATION

AKTIV DISCUSSES INTENSIFICATION, SCIENTIFIC-TECHNICAL PROGRESS

Moscow SELSKAYA ZHIZN in Russian 19 Jul 85 p 2

[Article by N.Aliyeva and Ye. Petrakov: "Stricter Demands upon Cadres --The Party-Economic Aktiv of the USSR Ministry of Agriculture Discusses Questions in the Acceleration of the Sector's Scientific-Technical Progress"]

[Text] The intensive economic development path, approved at the July Conference of the CPSU Central Committee requires a sharp increase in the organizing role of management elements in the national economy and more active work by ministries and departments. Great tasks are facing ministries in the country's agro-industrial complex. How can the efficiency of sector management be improved? How can one find the shortest paths for accelerating scientific-technical progress in the sector? These questions were put at the center of the USSR Ministry of Agriculture aktiv's attention at a meeting on 17 July.

V. K. Mesyats, USSR Minister of Agriculture, gave a report on the situation in the sector. The main idea of the report was formulated precisely: It is necessary to restructure the ministry's activities so that it will genuinely creatively and actively head all work in the intensification of kolkhoz and sovkhoz production and become a staff for scientific-technical progress in the countryside.

This is possible. The countryside has considerable material-technical and scientific potential which can be boldly engaged in the solution of the task at hand.

The speaker stressed that we cannot now be satisfied with the results attained. In recent years negative tendencies have appeared in agricultural development. First of all is the marked reduction in labor productivity growth.

Improvements in the use of funds are a huge and still poorly realized reserve for increasing production. If the return from them were increased by only 1 percent the resulting additional output from field and farm would be more than 1 billion rubles.

The minister admitted that in recent years attention to the development of basic research has weakened.

Unfortunately, fundamentals and innovation are not now definitive in the activities of many units in the ministry itself and of some responsible individuals.

Ministry workers can and should become organizers for the most rapid transformation of farms to the intensive development path, increasing production with the same, or even less, labor, land and herds. The speaker admitted this.

However, specifically what each main administration will do for this remains on the drawing boards.

There is now a vital requirement to immediately increase the yields from each hectare. It is also important to improve animals' breeding qualities and stock makeup. In other words, there should be general increases in output per unit of available and newly supplied material and financial resources.

The acceleration of scientific-technical progress is a tested path of intensification. In crop production the main task remains that of attaining greater, but stable yields of grain, feeds and other crops.

Some kolkhozes have mastered and are skillfully using zonal systems to obtain high and stable yields. However, many farms have not been able to overcome unevenness in yields. It is unsound to attribute this to the weather. The reasons are elsewhere -- the noncomprehensive and ineffective mastery of scientifically based systems of agriculture.

Crop rotations have been introduced on 203 million hectares and mastered on 167 million. One fifth of the crop land is used unsystematically. Improvements in cropping structure are slow. There is still not a reliable procedure for fallow: violations are allowed in the times for ploughing it up, organic and mineral fertilizers are not fully applied and it is not worked on time. The elimination of these shortcomings is an urgent task for all agricultural organs.

Selection and seed raising require great attention. Positive evaluations have been made of the work done by the All-Union Selection-Genetics Institute, the Krasnodar NIISKh [Agricultural Scientific Research Institute], the Don and Siberian NIISKh, the All-Union NII for Corn and certain other scientific research centers. At the same time, the conference participants noted a whole series of selection centers which are not completely meeting production needs.

One of the decisive factors in scientific-technical progress is the introduction of intensive and industrial technologies for raising agricultural crops. This year they have been mastered on over 28 million hectares. Where all technological parameters are strictly observed, high yields are obtained, even in unfavorable conditions. Not all technologies have been brought to the completion state and differentiated for zones in the country.

A wide circle of problems must be solved to accelerate the intensification of animal raising. There are many shortcomings here. The speaker stressed that

the task is not only to make maximum use of available reserves, but also to seek out new approaches and new paths for sharply improving feed production efficiency. VASKhNIL [All-Union Academy of Agricultural Sciences imeni V. I. Lenin] scientists should give their solemn word.

Ways of improving selection and breeding work and improving the use of breeding resources were examined in detail. The activities of the All-Union NII for Beef Cattle Raising in Orenburg were sharply criticized. It is not having an effective influence upon the situation at kolkhozes and sovkhozes. The Main Administration for Animal Raising also has to answer for the poor results.

There was a thorough discussion of the situation at farms. What is most important, specific means for eliminating the situation were indicated.

The aktiv sharply criticized the Main Administration for Mechanization and a number of scientific institutes, including the TselinNIIMESKh [Virgin Lands NII for Agricultural Mechanization and Electrification], VIESK [All-Union Institute for Agricultural Electrification] and VIM [All-Union Institute for Agricultural Mechanization]. It was pointed out that they should more strictly approach the development of machinery systems proposed for production. In his speech, Ye. F. Dvortsov, the main administration's chief, admitted that the criticism was justified. But what is next. The minister was forced to interrupt the speaker and ask directly:

"What ways does the main administration see to eliminate the shortcomings? What must be done first?"

There were no answers to these questions. Some other problems raised at the meeting were also without specific answers. This is why in his concluding words V. K. Mesyats, after noting the scattered nature of some speeches, stressed that at forthcoming party meetings main administrations need to outline specific measures and have a clear cut plan for eliminating the shortcomings pointed out at the aktiv's meeting.

Party organizations and each communist are now striving to approach the tasks in a new, more fundamental and exacting way, not trying to escape from painful problems. This is what we were told during intermissions by rank and file workers in the ministry. In particular, they are concerned about how to reduce the number of various letters, instructions, and rulings sent to local units. These latter continue to complain about the abundance of such paper flow. This problem touches directly upon the scientific organization of labor in the ministry apparatus and should have been reflected in speeches. However, it is a pity that not a word was said about it.

Party committees could better organize meetings and invite local workers to them. Speeches by ministry rank and file workers would also be fitting. However, strange as it may seem, only deputy ministers and main administration chiefs appeared at the podium. But, as you know, that is how it was done at previous aktiv meetings. Doesn't this show that the ministry has still not rejected the old style of work?

The meeting's resolutions outline major tasks. However, they can hardly be solved if old positions are adhered to and if the need for sharp changes is only verbally admitted. These changes will be made only when all units in the sector's staff actively begin to restructure their work.

V. A. Karlov, chief of the CPSU Central Committee's Agriculture and Food Industry Department, attended the meeting.

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AGRICULTURAL MACHINERY AND EQUIPMENT

CRITICISM OF LIVESTOCK, FEED PRODUCTION EQUIPMENT DRAWS RESPONSE

Problems, Recommendations Outlined

Moscow SELSKAYA ZHIZN in Russian 23 May 85 p 2

[Article by M. Lupakov, director of Korotysh Sovkhoz and Hero of Socialist Labor; V. Klyukovskiy, chairman of Kolkhoz imeni K. Marx and member of the All-Russian Kolkhoz Council; L. Maydanova, milkmaid of Kolkhoz imeni Sverdlov; Z. Murskikh, farm director of Kolkhoz imeni 22 Syezd KPSS; A. Rusanov, senior zootechnologist of State Breeding Plant imeni 17 Partsyezd; G. Chugunov, deputy director of the rayon agricultural administration and meritorious agricultural machine worker of the RSFSR; A. Konyashin, engineer for the mechanization of labor-intensive processes in Korotysh Sovkhoz; and A. Trubitsyn, director of the line-installation section of the rayon agricultural equipment association, Livenskiy Rayon, Orlov Oblast: "Dependable Equipment for Farms: An Open Letter to Scientists, Designers and Collectives of Enterprises That Produce Machines and Equipment for Livestock Raising and Feed Production"]

[Text] We the agricultural workers of Livenskiy Rayon, Orlov Oblast, decided to turn to you with our thoughts and concerns about the present and future of our farms and about what must determine their contemporary level. We have been given this right by our many years of work within agriculture, including in its most important branch--livestock raising, and by our intense interest in having conditions concerning this branch improve steadfastly. In addition, we are taking into account that both you and we are partners within the agro-industrial complex.

Our appeal to you is dictated by that constant concern that our party and government demonstrate with regard to agricultural development. At a recent meeting of the CPSU Central Committee with directors of industrial associations, enterprises, kolkhozes, sovkhozes and production brigades, and with specialists and scientists and at the April Plenum of the CPSU Central Committee special emphasis was placed on the fact that right now questions relating to decisively placing production on the path of intensification, to improving production structure, to accelerating scientific-technical progress and to significantly improving production quality are being made a priority. And here we livestock farmers cannot do without the aid of machine builders.

We all know well that the level and tendencies of technical progress today determine, to a significant degree, the economy of our branch, its supply of cadres, its social prestige and even the directions of its zootechnical work. There is not a single milkmaid, poultry caretaker or swineherd who would not be grateful to the developers of livestock-raising technology for freeing them from heavy manual labor in operations such as milking of cows, feed distribution or the cleaning of production facilities. Before the very eyes of a single generation of livestock farmers mechanization sharply raised the general quality of production on farms. Work became easier as well as more interesting and more attractive, which immediately increased the authority of the livestock-raising professions and decreased the urgency of the cadres problem.

This is commonly known. For this reason it is not necessary to speak about it at great length. Whom would we have to convince today that mechanization is a good? In any case it is more useful to view that which has been done as the beginning of that which still remains to be done. Thus we would like to discuss with you not that which we already have but that which we together still have not been able to accomplish. For the same reason we will limit ourselves to the problem of mechanizing cattle farms, where the difficulties are much greater than in other branches of livestock raising.

Livenskiy Rayon, for example, is characterized by the highest level of overall farm mechanization in our oblast. In dairy farming it already approaches 100 percent. In comparison to other regions the productivity of the dairy herd is high here. Of course the labor productivity of livestock farmers here is also higher. Nevertheless, 8.5-8.5 man-hours are expended in the region to produce a quintal of milk. This is no particularly great achievement.

Let us look at any farm that is equipped with the most modern set of machines and mechanisms. Here one worker takes care of an average of 13-14 cows. In other words, this is approximately the same number as previously when manual milking was utilized. What happens? Technology has freed a large number of milkmaids, but the vacancies that were created were occupied immediately by master-adjusters, operators, cowmen and stokers. The labor that was saved in the care of animals is now almost completely expended in the care of machines.

In our opinion, this happened for two reasons. First of all, the mechanization that we call overall is still not that. Secondly, equipment that is manufactured for farms is often imperfect and undependable and therefore too labor-intensive to repair.

Let us begin with probably the simplest--water supply and providing drinking water for cattle. It would seem that everything was adjusted here long ago. But this is not the case. In any enterprise workers know how much confusion abounds with regard to the operation of farm wells, and how often immersion pumps, which are still not installed with dependable electrical safety systems, break down. It would seem to be a simple matter--an automatic water fountain with a valve. This type of equipment, which is not subject to a mechanical load, should operate according to the principle, "install and forget about it." In practice, however, it is necessary to replace every fifth fountain annually.

In recent years farms have tested up to a dozen different methods of manure removal. But one that would satisfy livestock farmers in all regards still has not been found. We understand that your task to develop new machine systems is made more difficult by the absence of a single technology for maintaining livestock. But evidently this must be accepted as a reality, as a specific characteristic of agricultural production. It is important to improve the quality of equipment for both tethered and untethered upkeep of animals.

No matter how much designers try to modernize or improve existing transporters there is still no fully-mechanized system of manure removal. We are speaking about a system which includes the mechanized hauling of manure from cowsheds to manure-storage facilities. Here there have also been many variations--electrical carts, pneumatic equipment and hydraulic flotation--but in the final analysis it was necessary to return to tractor trailers--a very expensive form of transport. In other words, the question remains an open one.

As before, there are many weak points in the technology for feeding animals. For how many years have livestock farmers unanimously been asking for a model feed shop? Finally the desired and long-awaited KORK-15 was put into quantity production. However, we must be honest--having examined it carefully we somehow did not discover any advantages in it as compared with homemade shops. The "functions" of the serial feed shop are limited to mixing silage with straw cuttings and concentrates. Moreover, concentrates are introduced in dry form, which was rejected by everyone long ago.

The warming up of feed mixtures was not foreseen, and this means that in the winter cattle will receive refrozen silage from this kind of shop. The shop has no room for utilizing syrup, pulp and mash in mixtures. Is there really any point to building such a solid structure simply for the mixing of straw and silage? After all, this can be done in mobile distributors-mixers or on open platforms--this is simpler and less expensive.

We still do not have good straw crushers--either stationary or mobile. Of feed distributors the most widespread is the mobile KTU-10. Its supply even forestalls demand. But its quality! Either the axle twists, or the belt snaps or the chassis breaks.

We do not wish to appear as critics of everything. What purpose would that serve? We are truly pleased when you give us good machines, such as the US-15 delta-scraper, the IKM-5 and IKS-5 tuber root cutters, S-30 mixers, heat generators and boilers-steam generators. Please believe us, the user of your products knows how to be grateful as much as the next person. So let's try to understand each other correctly, without offense.

Next we must discuss the most complex of farm equipment--dairy equipment. First we must talk about the milking apparatus. We know that different parts of the cow's udder are milked differently. The rear teats produce more milk, the front teats--less. This is a biological fact and as such is inescapable. Consequently, we need equipment with manipulators that automatically cut off

each milking nozzle individually. This kind of apparatus has been promised to livestock farmers, but it seems that we have been waiting for it for too long.

We do not even want to bring up the rubber on the nipple because we have grown tired of discussing it--the rubber is bad. Clearly there is a shortage of equipment for measuring the vacuum pulsation frequency; milkmaids still regulate the pulsator by ear. A perceptible shortcoming of current milking machines is the lack of reliability of rarefaction in the vacuum-conduits. We feel that the production of low-capacity RVN, UVU and UVB pumps should be halted; we need powerful vacuum units with at least 240 cubic meters capacity equipped with pressure stabilizers.

We still find many difficulties with the storage and primary processing of milk. The TOM-2 cooler tank has a low productivity in terms of cold. In addition, in it milk is subject to long-term mixing and begins to be beat up--something like churned butter results. It would be a good thing to replace this unsuitable cooler with MVT-14 and MVT-20 units.

Up until now we have discussed improving existing livestock-raising equipment. Meanwhile, even on the most modern farms there are technological processes that are not fully mechanized. This includes the cleaning of feeders and animals, the distribution of hay, and the washing and massage of cow udders. With manual milking, when the group of animals being cared for was small, these operations took up a relatively small part of a milkmaid's work day. But now the situation has changed. It is in these kinds of jobs that most of the work shift is spent. What does it mean, for example, to clean 50-75 cows? Not minutes but hours are needed for this.

Today the mechanization of such operations is the most realistic reserve for increasing labor productivity. Consequently, it is time to think about how best to do this.

While working on the development of new machine systems for farms and complexes it is essential, in our opinion, to make it compulsory to foresee the possibility of centralized and automated control of all equipment. It is too great a luxury to place a "dispatcher" at each transporter, as is often done now.

Our main request to you is to significantly improve the operational quality of equipment. You must understand that we simply do not need a machine which replaces two cowmen but which requires two mechanics to take care of it. Having bad equipment is the same as having none at all.

If the designers, technologists and collectives which develop and manufacture farm machines will evaluate their products according to strict measures we are sure that livestock farmers will have nothing to say to them except words of gratitude and that our common table will hold milk, meat and other livestock-raising products.

Officials Respond

Moscow SELSKAYA ZHIZN in Russian 9 Jul 85 p 2

[Article by V. Voronov and N. Antropovskiy, workers of the All-Russian Scientific-Research and Planning-Technological Institute of Mechanization of Livestock Raising (VNIIMZh); N. Yendovitskiy, USSR Deputy Minister of the Machine Tool and Tool Building Industry; N. Lavrentyev, first deputy chairman of the oblast executive committee and council chairman of the oblast agro-industrial association, Chelyabinsk; and L. Vasilyev, USSR Minister of Machine Building for Light and Food Industry and Household Appliances: "Dependable Equipment for Farms"]

[Text] The editors continue to receive answers and responses to the open letter by livestock farmers of Livenesskiy Rayon, Orlov Oblast, to scientists, designers and collectives of industrial enterprises which manufacture farm equipment, published on 23 May of this year under the title, "Dependable Equipment for Farms." Today the newspaper is printing some of these responses.

[Voronov, Antropovskiy] We read the open letter entitled, "Dependable Equipment for Farms" and decided to express our opinion. The authors write correctly about the fact that there is still a great deal of manual labor on livestock-raising farms. It is not for nothing that they turn to scientists, designers and collectives of enterprises with a request to improve the quality and dependability of equipment.

Scientific-research institutes have developed many designs. Many of them could ease the labor of livestock farmers. But how are these designs being introduced?

In our institute as far back as 1973 scientists developed a standard-sized series of centralized vacuum units with water ring pumps and a vacuum stabilizer which enables us to maintain rarefaction in milking machines at the prescribed level. The sound level in these units is several times lower than in mass-produced units. With water ring pumps water is recirculated so that its consumption is practically eliminated. The dependability of these units is considerably greater than that of units manufactured by industry.

Centralized vacuum units have been introduced on the farms of Novyy Put Kolkhoz of Podolskiy Rayon, Kolkhoz imeni Kirov of Balashikhinskiy Rayon and Povadinskiy Sovkhoz of Moscow Oblast. Judging by the responses, these units are liked by livestock farmers and they yield a considerable economic effect. At the VDNKh [Exhibition of Achievements of the National Economy of the USSR] this type of unit has been working without interruption for over 10 years.

Research materials, the results of many years of work and the innovations (if we can still call 12-year old designs by this name) were once approved by the scientific-technical council of the USSR Ministry of Agriculture. Centralized vacuum units were included within the machine system. However, their production still has not been organized. The Riga GSKB [State Special Design

Office] of Minzhivmash [Ministry of Machine Building for Animal Husbandry and Fodder Production] is not including the final development of centralized vacuum units in its plan. The start of serial production and extensive introduction of these units on farms would enable us to ease the labor of people, to decrease the frequency of mastitis among cows and to raise their productivity.

[Yendovitskiy] Minstankoprom [USSR Ministry of Machine Tool and Tool Building Industry] agrees with the proposals of the authors of the letter concerning the cessation of production of small-capacity RVN-40/350 vacuum pumps and milking machines. The manufacture of these pumps was assigned to Moscow's Krasnaya Presnya Experimental Plant of Minstankoprom in accordance with technical requirements elaborated over 20 years ago; it is for this reason that their technical level does not meet the contemporary needs of consumers.

Now Minzhivmash has developed more powerful vacuum pumps for milking units but the manufacture of obsolete low-productivity RVN-40/350 pumps continues (the plan for 1985 includes the manufacture of 12,000 of these).

Minstankoprom feels it is essential to accelerate the final development by Minzhivmash of perfected designs for vacuum pumps for milking units and it will render the necessary aid in manufacturing them.

[Lavrentyev] It was with great interest that the workers of the Chelyabinsk Agro-Industrial Association discussed the questions raised in the open letter of livestock farmers of Livenskiy Rayon, Orlov Oblast, which was recently published in SELSKAYA ZHIZN. It is clear to all of us that the level of technical progress today determines the economy of public livestock raising and the influx of labor resources into this branch to a decisive degree. The development of zootechnical operations depends on it greatly as well.

With each passing year the material-technical base of agriculture is strengthened. During the last 9 years alone our oblast has received machines and equipment worth about 121 million rubles, an increase by a factor of 3.6 over the three preceding five-year plans taken together, for the purpose of mechanizing production processes in livestock raising. The resources are considerable, but we must admit that the return on them is still lower than expected.

The fact is that the mechanization of labor-intensive processes in the village is not universal by far. It encompasses only individual technological processes, which does not yield the necessary effect and does not enable us to noticeably curtail the expenditure of manual labor. In addition, the projected freeing of workers following mechanization is often relative in nature because the equipment that is installed requires additional operators, mechanics and master-adjusters due to its imperfection.

An improvement in labor productivity within livestock raising depends to a large degree on the mechanization of feed production. Nevertheless, the feed-shop equipment that is delivered to enterprises does not correspond to scientifically-based methods of preparing full-value feed rations. The

problems of manure removal, feed distribution and automatic water supply to animals have also not been solved.

Of special concern is the situation involving milking equipment. The quality of nipple rubber, the drop in vacuum-capability of equipment and its selectivity with regard to the biological characteristics of the cow's udder--these are the vital questions that require, in our opinion, a solution on a priority basis.

We fully support the address of the Livenskiy Rayon agro-industrial association to scientists, designers and collectives of enterprises that produce machines and equipment for livestock raising and feed production; we feel that it is very topical and that it is dictated by life itself.

[Vasilyev] Minlegpishchemash [USSR Ministry of Machine Building for Light and Food Industry and Household Appliances] has examined the questions raised in the open letter and feels their presentation is correct and urgent.

Tasks involving the implementation of plans in the USSR Food Program and the supply of enterprises belonging to the agro-industrial complex with modern equipment are under the constant control of the ministry. The manufacture of equipment for enterprises and organizations of USSR Minselkhoz [Ministry of Agriculture] is carried out in accordance with orders by Goskomselkhoztekhnika [State Committee of the Agricultural Equipment Association], and in 1983 in monetary terms was equivalent to 88.1 million rubles, 1984--100.4 million rubles and in 1985 it will reach 104.5 million rubles.

Branch enterprises manufacture the following technological equipment for dairy farms: gamma-separators, pasteurizers-coolers, refrigeration tanks of various capacities, centrifugal and automatic suction pumps for the collection, cleaning, cooling and storage of milk and automatic machines for packaging animal semen in polypropylene straws.

Branch enterprises give constant attention to raising the technical level of equipment being manufactured. In particular, Biyskprod mash [Biysk Machine Production Association] plans to modernize brand G6-OPA and G6-RPB pasteurization baths, and Plavsk's Smychka Machine-Building Plant--OM-1 equipment for cleaning and cooling milk as well as KPS-108 equipment for preparing artificial milk and for distributing it to animals.

Moreover, work is being done to develop new equipment. Thus, for example, VNIIEKiprod mash [All-Union Scientific Research and Experimental Institute of Food Machinery] has developed a separator with a productivity of 650 liters per hour for dividing blood into plasma and fermentation elements; on the basis of results of reception testing the separator has been recommended for production according to the highest quality category. Beginning next year Plavsk's Smychka Plant will start manufacturing SM-1A milk cleaners-coolers, which achieve direct operation with milking equipment in a vacuum. In 1986 Vologda's Mol mash SKTB [Special Design and Technological Office of the Dairy Industry] will develop designs for milk tanks equipped with devices for measuring and controlling milk quality.

With the goal of continued improvement in work effectiveness related to introducing machine systems for overall mechanization of agriculture, an interdepartmental commission made up of directors and specialists from Minlegpishchemash has been created.

Taking into account the topicality of the questions raised, specialists of the head institute of VNIIEKIprodmas and of Vologda's Molmas SKTB were sent to Livenskiy Rayon, Orlov Oblast, to study the opinions of agricultural specialists concerning the equipment that is manufactured by enterprises of Minlegpishchemash; together with directors of the rayon agricultural administration these specialists surveyed a number of dairy farms in the rayon's kolkhozes and sovkhozes.

The results of this work were examined at the Livenskiy CPSU Rayon Committee.

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AGRICULTURAL MACHINERY AND EQUIPMENT

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REPAIR AND MAINTENANCE BASE IMPROVEMENTS DISCUSSED

Moscow TEKHNIKA V SELSKOM KHOZYAYSTVE in Russian No 6, Jun 85 pp 51-53

[Article by Doctor of Technical Sciences V. I. Chernoiivanov, deputy chairman of the USSR State Selkhoztekhnika Committee, under the heading "Machinery Repair": "Scientific-Technical Progress in Repair-Maintenance Production"]

[Text] The highly productive use of agricultural equipment is of important significance to successfully resolving the tasks of implementing the country's Food Program. The higher the output of this machinery, the more timely the performance of field work will be agrotechnically, which is one of the basic conditions for agricultural crop yield growth and for increasing gross harvests of farm produce.

The fullest use of the technical potential of this machinery depends foremost on the level of its readiness. All conditions necessary for this are currently present. A far-flung network of repair-maintenance enterprises has been created in the countryside.

In the early 1960's, the Selkhoztekhnika system included about 4,100 small shops (formerly MTS [machinery-tractor stations]) and 340 small machinery plants. Each repair shop repaired an average of 94 tractors and 14 combines of various brands. Plants did practically no equipment repair. Insignificant help was given kol-khozes and sovkhoses in repairing the machinery-tractor fleet, and there was no maintenance at all to speak of. At the same time, the farms had practically no repair base. The 52,000 kolkhozes and sovkhoses had only 17,000 repair shops, basically other facilities adapted for this purpose, and slightly more than 20,000 mobile repair shops.

In recent years, modern principles of the social division of labor have been systematically implemented in repair-maintenance production on a fundamentally new basis. They anticipate the centralized, specialized repair and maintenance of complex equipment and units at industrial-type enterprises.

The farms now have more than 50,000 repair shops and 30,000 maintenance centers, garages, machinery yards and petroleum dumps; upwards of 130,000 mobile repair and repair-diagnostic shops, maintenance units and fuel trucks are in operation.

All the repair-technological equipment, stationary and mobile repair equipment, maintenance, diagnostic fuel and lubricants equipment are produced basically at

Selkhoztekhnika plants. Its repair network numbers about 4,000 shops, including 2,000 specialized shops and 320 mechanical repair plants. The production capacity of the enterprises is 3.1 million conventional repairs. There are 2,600 stations for technical maintenance on automobiles and large tractors, 2,700 maintenance stations for stockraising equipment and more than 3,000 rayon technical exchange centers which are a connecting link between the farms, rayon selkhoztekhnika and the specialized enterprises.

In comparison with 1965, substantial positive qualitative changes have occurred in the repair base economy, as well as in equipment preparation and protection indicators. On average, the capacity of each enterprise and the amount of commodity output produced in Selkhoztekhnika have increased four-fold. The availability of power to repair shops and plants has increased. Whereas the total number of repair enterprises has decreased by four percent, their capacity has been increased 2.8-fold through renovation and retooling and the output produced per square meter of production space and the labor productivity have risen three-fold. Specialized forms of subassembly and unit repair organization on mechanized flow lines (PML) have been widely introduced.

In the 11th Five-Year Plan, Selkhoztekhnika enterprises have been repairing about 750,000 tractors, 160,000 grain harvester combines, upwards of two million automobile, tractor and combine engines, 200,000 automobiles, one million subassembly and unit sets, about 250,000 hydraulic distributors and about two million hydraulic pumps annually; more than 500 million rubles worth of parts rebuilding has been done annually. Exchanges at technical exchange centers have increased seven-fold and now total 1.4 million rubles. In this regard, 70 percent of the engines, units and subassemblies are issued to farms the day the repair fund is released. The development of unit major overhaul at specialized repair enterprises has facilitated the broad introduction of the unit method of repair at kolkhoz, sovkhos and rayon selkhoztekhnika shops. As a result, repair quality has risen, repair time and spare parts expenditures have decreased. More than half the complex equipment in need of repair is now being rebuilt at State Selkhoztekhnika Committee enterprises. Progressive forms of organizing maintenance on the machinery-tractor fleet, petroleum equipment and water-irrigation equipment have been widely introduced.

State Selkhoztekhnika Committee scientific research organizations have worked out the technology and regulations for specialized maintenance, diagnostics and storage of machinery, the state standards for them and the technical means for performing them. The forms of rayon Selkhoztekhnika association participation in introducing specialized maintenance of the farm machiner-tractor fleet are diverse and depend on specific conditions, the status of the repair base and the composition of engineering-technical workers. In some instances, machinery maintenance services are created jointly with the farms. In this regard, the rayon selkhoztekhnika is accountable for technical diagnostics and supplying spare parts and replaceable subassemblies and units. On other farms, all work is done with rayon selkhoztekhnika funds and personnel.

In 1984, the machinery-tractor fleets of 35,000 farms, with about 1.4 million tractors, were serviced jointly with or singly by rayon selkhoztekhnika. Rayon selkhoztekhnika stations and centers service more than 500,000 cars and upwards of 240,000 large tractors, that is, 82 percent of the number available in agriculture.

Nearly 300 shops and sectors and 3,000 mobile brigades have been set up for the repair and maintenance of petroleum-depot and irrigation equipment. Eighty percent of the farms are covered by this type of service.

The experience accumulated testifies to the effectiveness of joint kolkhoz, sovkhos and Selkhoztekhnika efforts aimed at ensuring the high technical readiness of the machinery-tractor fleet for field work. When this work has been properly organized, the labor intensiveness of repair-maintenance work has been 30-35 percent lower, the shift and daily output of machinery-tractor units have been higher, and equipment idle time due to malfunctions has been reduced 50 percent. Moreover, expenditures of funds on equipment repair and maintenance have been reduced by 100 rubles per tractor and automobile and by 40 rubles per combine per year; fuel expenditures have been reduced by six percent.

Three main repair-maintenance production links have evolved in the agroindustrial complex: those on kolkhozes and sovkhoses, those in the rayon selkhoztekhnikas (consisting of general-purpose shops, maintenance centers and exchange centers) and the network of specialized repair enterprises. The amounts and types of work done in each link depend on specific conditions. Experience has shown that this direction is most effective. All this has permitted a significant rise in the level of equipment readiness to perform field work and a reduction in the number of machines written off each year. The number of tractors which have been repaired has been reduced by 12 percent as a result of the improvement in repair quality, including an 11-percent reduction in major overhauls. Currently an average of 78 of every 100 tractors is being repaired, 21 percent being major overhauls. Over the past five years, expenditures of funds on repairing and maintaining machinery relative to their balance value have been reduced by four percent. This indicator is 19.1 percent.

However, there are still quite a few unsolved problems in improving the effectiveness of repair-maintenance production. These include, first of all, an inadequate level of production concentration and specialization in a number of regions, which delays the introduction of progressive technologies and forms of labor organization. At present, this work is being done in a planned manner at all levels of repair-maintenance production in the agroindustrial complex. It is only on this condition that we can ensure the broad introduction of modern, energy-saving industrial repair technologies, highly precise equipment and electronics, and thus achieve high economic indicators.

For Example, the growth of increase in the production volume of repair enterprises from 300,000 to 1.6 million rubles, raises labor productivity and return on capital nearly two-fold, from 6,800 to 12,000 rubles per worker and from 0.87 to 1.64 rubles, respectively. Naturally, the active portion of the fixed assets will also increase and output net cost will decrease. Thus, this indicator is 1,195 rubles when YaMZ-138NB diesels are repaired at an enterprise with an annual program of 300 units, but only 790 rubles when the enterprise program is 5,200 units.

The continued concentration and specialization of repair-maintenance production will enable us to resolve questions of significantly improving the quality and lowering the net cost of repairs.

The technologies and equipment for overhauling tractors, combines, motors, units and subassemblies to a service life of at least 80 percent that of new items, developed by the GOSNIFI [State All-Union Scientific Research and Technological Institute for Repair and Operation of the Machinery-Tractor Fleet], is having a positive impact on repair economy. In 1984, a majority of the specialized enterprises were using progressive technology. More than 320,000 tractors, or nearly 80 percent of all tractors overhauled, and 878,000 diesel engines, or more than 90 percent of all overhauled, were repaired to this reliability indicator.

The introduction of progressive technology ensures labor productivity growth and improved work quality at the repair enterprise. As a consequence of the improvement in repair quality, equipment idle time and kolkhoz and sovkhoz expenditures on equipment maintenance are dropping. Given a slight increase in repair net cost due to additional operations, specific operating expenditures are decreasing. Thus, whereas the average net cost of overhauling an SMD-14 diesel was 280 rubles, to a service life of 2,400 motor-hours, repair technology to a higher service life (4,800 motor-hours) costs 380 rubles, but specific expenditures are 12 kopecks and 7.9 kopecks per motor-hour, respectively. On the whole, operating expenditures for all tractor overhauls using such technology have been reduced by more than 300 million rubles, and metal used in spare parts has been cut by 250,000 tons.

In the future, we anticipate the continued development and strengthening of the repair-maintenance base at all levels.

In the union republics, upwards of 80 percent of the capital investment is being directed into renovating and retooling existing enterprises. This has ensured higher rates of scientific-technical progress, the development of inadequate capacities and the efficient use of funds for construction, materials and equipment. Whereas specific capital investments per hypothetical repair are 1,667 rubles for new construction, they are 695 rubles for renovation and 559 rubles for retooling. Re-equipped technical service stations require two times fewer capital investments per large tractor and five times fewer per automobile as compared with construction of a new facility.

Scientific-production associations and institutes of the USSR State Selkhoz-tekhnika Committee, in cooperation with the USSR Academy of Sciences, VASKhNIL [All-Union Academy of Agricultural Sciences imeni V. I. Lenin] and corresponding subdivisions of various departments, are intensifying the development, production testing and introduction of more-progressive technologies which will ensure a machine service life after major overhaul at the level of new equipment and a significant reduction in malfunctions during operation.

Labor expenditures on routine maintenance and repairs when done on the farms are currently higher than when done in Sel'khoztekhnika, and expenditures on major overhauls are higher at multipurpose shops than at specialized enterprises. The labor intensiveness of this work will be significantly reduced through labor division and specialization and through the extensive automation and mechanization of technological processes, especially at specialized repair enterprises, and the demand for repair workers will be reduced, which will in the final analysis permit a reduction in kolkhoz and sovkhoz expenditures on maintaining equipment in operating condition.

Washing and cleaning machinery, subassemblies and parts is very important. Dirt and abrasives lead to rapid parts wear. This is one reason for excessive parts wear and poor reliability of repaired equipment.

GOSNITI is currently working out a washing equipment system. It ensures hydrodynamic cleaning with jets of a liquid cleanser, immersion [cleaning] with the liquid agitated by turbulent flooding with streams of water, washing undisman-tled engines and other units inside and out simultaneously, circulating washing solution and pulse-fed compressed air, as well as ultrasonic cleaning of electrical equipment parts, mechanical cleaning using metal shot, and thermochemical cleaning using an alkali-salt melt. Introduction of this equipment will increase labor productivity 1.5- to two-fold in these operations, reduce energy expenditure 50 percent and reduce the size of the washing department. The metals-intensiveness of washing equipment will be reduced by 30-40 percent and cleaner expenditure will drop by a third.

New cleaners, "Temp-100" and "Temp-101A," with good cleaning properties and improved toxicological characteristics, have been developed and are being produced. "Ritm" emulsifier-solvent permits cleaning parts at a temperature of 20-30°C.

Progressive means and methods of painting and drying subassemblies, units and machinery after repair. These include airless paint sprayers, infra-red driers and others. Their use will save up to 20 percent in paints and will lower energy expenditures by 60 percent.

Multiposition test stands for monitoring the overall technical condition of blocks, cylinder heads, crankshafts and connecting rods for SMD and YaMZ diesels are being widely used in repair technologies. These test stands are able to make very precise measurements and increase labor productivity four- to five-fold as compared with traditional diagnostic methods.

Mechanized flow lines for repairing motors, units and subassemblies and for rebuilding parts using hydraulically driven actuating mechanisms, as well as automatic manipulators and industrial robots, have been included in the technologies developed for specialized enterprises. Such lines increase repair labor productivity two- to three-fold; an example would be MTZ-type transmissions for K-700, T-150K and DT-75 tractors and grain-harvesting combines. Some 400 different pieces of equipment are being series-produced to overhaul K-700 and K-701 tractor chasses.

In the aggregate, 800 different pieces of technological-repair equipment and 500 pieces of equipment for repairing grain-harvesting, fodder-harvesting and other combines have been developed for repairing tractors and automobiles. Specialized enterprises are running production tests of technology ensuring the reliability of overhauled equipment at the level of new equipment and with repair costs less than 50 percent of the cost of new machinery.

Particular importance is being attached to developing parts rebuilding as one of the main factors in lowering the net cost and improving the quality of repair and maintenance. It is also important that, when this is done, we save metal, labor expenditures and money and supplement stocks of spare parts. Prompt rebuilding of body parts alone increases bearing, shaft and gear life 1.5- to two-fold.

In 1984, Selkhoztekhnika enterprises rebuilt 1,300 different kinds of parts, a total of 518 million rubles worth and the equivalent of supplying a total of more than 800 million rubles worth of new spare parts. About a million tons of metal was thus freed for other uses.

With a view towards accelerating scientific-technical progress in repair production, which determines in significant measure how economical it is, an All-Union Scientific-Production Association, the "Remdetal," has been created under the USSR State Selkhoztekhnika Committee with the task of developing effective technologies for rebuilding worn out parts, special equipment and repair materials. Specialized plants of the association are manufacturing prototypes and series-produced equipment for mechanized flow lines and centers. In short order, it has developed a series of highly-efficient new technological processes which are now being introduced into production. Scientific organizations of the USSR Academy of Sciences, the Arc Welding Institute imeni Ye. O. Paton, the Institute of Metallurgy imeni Baykov, Tulachermet NPO [scientific-production association] and the ZIL, Avtodizel and other production associations have taken an active part in their development. Coordination of this work was entrusted to the USSR State Selkhoztekhnika Committee.

Technologies are currently available for rebuilding more than 1,300 different parts. In the near future, we will be rebuilding at least 4,000 different parts. Total work volume will be increased to 800-900 million rubles (in prices of rebuilt parts).

Some 150 mechanized flow lines for high-volume rebuilding of bearing rollers, cylinder sleeves, piston pins, connecting rods, crankshafts, tractor and automobile engine blocks, plowshares and other parts are in operation at enterprises of the system.

We are currently developing adjustable technological lines for rebuilding a broad products list of parts using modern methods.

Various welding-smelting technologies are most widespread in parts rebuilding. Powder materials are widely used. The Taynchinskiy Plant in Kazakhstan rebuilds cylinder head valve seats by welding on powder alloys, lowering labor intensiveness by 40 percent and net cost by 20 percent and increasing durability two-fold as compared with welding on new metal-ring seats.

Automatic and semiautomatic open-arc surfacing of worn part surfaces using self-protecting powder wire or tape is particularly effective. In the future, we intend to rebuild upwards of eight million parts of 400 different types using powder materials.

Plasma coatings increase the service life of rebuilt parts several-fold and reinforcing them with hard alloys increases wear resistance five- to 10-fold.

Laser fusing has undergone production testing. Rebuilt parts possess high strength and wear-resistance.

Economical technology for applying coatings by detonation, plasma and gas plasma methods characterized by high wear-resistance is being introduced to replace

energy-intensive electrolytic processes. These technologies are being widely used in mechanized flow lines and automated complexes, in large parts rebuilding shops and sectors.

Parts rebuilding is an important reserve for increasing the operating reliability of overhauled equipment and for increasing its economic effectiveness. It requires the constant attention and comprehensive assistance of metallurgical, chemical and machine-tool manufacturing industries. Each ruble invested in parts rebuilding provides the national economy with dozens of rubles in savings.

The extensive introduction of machine diagnostics into repair-maintenance production, that is, determining their technical condition without dismantling them, and perfecting the means of checking them are a great reserve for saving material resources. Electronics are now coming in to replace mechanical means, which require high labor expenditures, and their range of application is being broadened. Technical diagnostics ensures better-quality machinery repair and service, as well as a reduction in all types of expenditures and the elimination of premature repairs and equipment write-offs.

Accelerating scientific-technical progress in repair-maintenance production, concentrating and specializing it, are decisive conditions for comprehensively increasing the effectiveness with which the machinery-tractor fleet is used.

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FORESTRY AND TIMBER

OPERATIONAL DIFFICULTIES IN PROCESSING RAW TIMBER DISCUSSED

Moscow PRAVDA in Russian 6 Jun 85 p 3

[Article by PRAVDA special correspondent in Voronezh, R. Fedorov, under the rubric "Alongside the Investigator": "The Timber Formula"]

[Text] It is said only in jest that the trees in a well-managed forest seem to make up a matched set. Only when the felled tree trunks have been stripped of their branches--at this stage they are called full-length logs--and are moving down the conveyer line to the crosscut saw, do their differences become apparent: thick and thin, round in cross-section, as well as oval, some nearly cylindrical, and others tapering sharply to a cone-shape; straight, as well as bent, the trunks sometimes bifurcate into two distinct boles. Some trunks are even rotted or hollowed-out at the base, or show excessive knotting.

Nationwide, some 400 million cubic meters of raw timber are felled each year. Each full-length log averages out to about four tenths of a "cube" [cubic meter], which means they number around a billion. Full-length logs cannot be considered as much as a semi-finished product of the timber industry, for they are the very rawest of raw materials. During cross-cutting, each felled log must be given a careful and skillful visual inspection: it is here that the rotted base section and the hollowed heartwood of the pine are cut away, for this is the log that will serve as the cross-tie, or will become construction lumber; this is the saw log that will provide planks, as well as mine supports.

"The difficulty of our job resides in the fact that the raw materials arriving from logging enterprises are nonuniform in nature; there is a wide variation in the size and quality of full-length logs, and even in the assortment of products obtained from them," says Professor V. Petrovskiy, head of the department of automation of production processes at the Voronezh Institute of Wood Production Technology.

...The stripped logs move relentlessly along the conveyer line, continuously "probed" by watchful human eyes: what operation does this facilitate? The cutting method to be used? Mere seconds are allocated for judgement and

decision. The speed of the conveyer line is determined by the maximum capacity of the saw, and is not governed by considerations of ease and evenness in the cutting of logs moving down it, nor by the happenstance of knotty and lop-sided logs, in which case, one is at a loss for proper procedure... It is difficult for the human operator, indeed, it is also quite boring to work under an automated regime.

And, Vladislav Sergeyevich Petrovskiy has one more "small point" [Russian = punktik]. This word is made especially appropriate by the fact that translated from the German, it means "point" [quotes added]. Within wood-processing technology, there is an operation known as "pointing." When a cross-tie beam is cut from a tree-length log, the accountant inserts a point in the appropriate ledger column, if construction "wood", or a mine support, then in the next, or the third column. Points and more points... This kind of accounting is essential, but on a nationwide scale, it occupies the time of tens of thousands of people.

It is the view of this researcher that it is both necessary and possible to free them from such uninteresting and unproductive labor. In addition, 40,000-45,000 persons could be freed from manual operations in the cutting and finishing of full-length logs. This will become feasible with the widespread introduction on cross-cutting lines of automated data-measurement systems for controlling technological processes in the production of raw wood materials. Such a system has been developed at the Voronezh wood research facility based on theories of institute scholars regarding automatic optimal cutting of full-length logs.

But how did they manage to overcome the problem of nonuniformity in full-length logs, and find a way to systematize production?

In answering this question, Professor Petrovskiy informs us that there is, so it seems, a certain timber formula: a mathematical equation which--for all of the various types of timber--clearly expresses the change in diameter of the trunk with increasing height. The thickness at the midpoint of the full-length log serves as the reference point for making computations. This midpoint is automatically gaged by a television "eye." After the necessary conversion, the signals are fed into a microcomputer, which determines the optimal program for cutting the full-length log. The equation describes only the variation in diameter of the trunk, therefore, its ellipticity and curvature, as well as the presence of rot, knotting and other defects--also observable by the television camera--are computed separately. The computer program is designed to allow insertion of appropriate corrections for each "extraordinary" case. After integrating all of the data, the computer sends a signal to the saw, or saws, which cut the full-length log at the predesignated spots, and to the release mechanisms, which distribute the cut logs in accordance with specific product groupings, after, of course, counting them.

"All of this takes place within a few seconds," Petrovskiy points out.

"The computer locates the best possible cross-cutting methods out of many hundreds of possibilities. This results not only in a savings of manual

labor, but it becomes possible to produce a large volume of high-quality finished goods as a result of optimization of the cutting process. The average wholesale price for a cubic meter of logs cut in this intelligent fashion, instead of haphazardly, is currently 50 copecks--and, in some cases, a ruble higher. And this is not some theoretical calculation, but actual market value. Examples of such automated systems are those now being introduced at enterprises in Lesosibirsk, and at the production association, "Russian Wood," near Serpukhov, as well as at a number of other locations.

In the data-measurement ASU TP [technological process automatic control system] used in the production of raw wood materials and developed by scientists at the Voronezh wood research facility, the "television eye" measures the diameter, determines the coordinates of the center of the transverse section and computes its area, as well as the volume of the full-length log and its component parts. It also records nonuniformities in the surface of the log and in its curvature. This is a highly complex operation, and I felt justified in posing a question for the scientist: did this necessitate the designing of a specialized television camera, or an improved version of existing models?

"By no means," replied Petrovskiy. "In my opinion, improvised equipment ruins automation. It must be reliable, and this is only possible when the system makes use of well-designed and thoroughly tested elements. Our system employs a mass-produced television camera and a standard production model microcomputer--the Elektronika-60M."

Automation is a precise field. And Professor Petrovskiy himself is a compelling figure in that field because he pinpoints problem areas, and does it within the most important areas. In his research, selection of the point of applied effort is not left to chance. "Pointing," optimal cutting... By his calculation: of the three levels involved in logging operations--tree-felling, transport and base-camp storage operations, where routing of felled logs, accounting procedures and processing of finished products are carried out--the most labor-intensive area, which accounts for half of all labor expenditures, is the latter. Even more compelling is his work on automation and optimization (the first solves an essentially social problem, the second, in addition to the other, solves a problem of conserving natural resources: the more timber produced, the less the need to cut it) of the process of cross-cutting full-length logs.

At the tree-felling level, his attention is directed to the following area: There is great deal of equipment in use here. The "Druzhba" gas-powered saw is, for the most part, already obsolete. Yesterday's lumberjack is today operating a timber-dozer, which grips the tree with "pincers," saws it, turns it over, and drops it on the ground. The operator has been freed from physical labor; he has only to control the powerful steel "arms" of the machine. But, in doing this, he bears the weight of an enormous psychological load, since he must, during his shift, carry out several thousand manipulations of control levers and switches in a precisely determined

sequence. Freeing the operator from the majority of these routinized actions is entirely feasible, which leaves only the one responsibility: directing the operating devices to the tree and seizing it. The machine should be allowed to do the rest itself: sawing, lifting, overturning and dropping the tree, and releasing its hold.

This is only one of the "subjects" which have drawn the creative attention of scientific researchers. There are quite a few others, all of which tend in essentially the same direction: ridding human occupations of monotonous and tedious "pointing," as well as mindless, mechanical operations. These are better handled by "intelligent" machines. Man, in contrast, possesses not simply intelligence--but reason.

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WATER RESOURCES AND LAND MANAGEMENT

ENVIRONMENTAL COMMISSION VIEWS RESOURCE CONSERVATION

PM141101 Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 10 Aug 85 p 3

[RASS report: "Concern for Nature"]

[Excerpts] A routine session of the USSR Council of Ministers Presidium Commission for Environmental Protection and Rational Use of Natural Resources was held 8 August.

The work of USSR Ministry of Timber Pulp and Paper, and Wood Processing Industry and USSR Ministry of the Fish Industry enterprise in nature conservation and rational utilization of natural resources in Kamchatka Oblast was discussed.

Kamchatka Oblast is unique in the Soviet Union as regards its natural conditions and stocks of salmon family fish. However, it was noted at the commission's session that the USSR Ministry of the Fish Industry, USSR Ministry of Timber, Pulp and Paper, and Wood Processing Industry, USSR Ministry of Power and Electrification, Ministry of Construction in the Far East and Transbaykal Regions, and other ministries whose enterprises are located in Kamchatka still do not fully ensure the effective conservation and rational utilization of the region's natural resources. Capital investments allocated for this purpose are not being fully utilized. Construction of nature conservation installations is proceeding too slowly. The established policy in the utilization of forests does not accord with the interests of either the fisheries, water resources, or forestry.

The commission has instructed the USSR Ministry of the Fish Industry, USSR Ministry of the Timber, Pulp and Paper, and Wood Processing Industry, other USSR ministries and departments whom this concerns, the RSFSR Council of Ministers, and the Kamchatka Oblispolkom reliably to ensure in the course of economic activity the protection and rational use of Kamchatka Oblast's natural resources. At the same time, the attention of the USSR Ministry of the Fish Industry was drawn to the need to adopt additional measures to stop the discharge of untreated effluent by enterprises under this ministry's jurisdiction into the oblast's water reservoirs, improve the utilization and replenishment of Kamchatka's fish stocks, and intensify monitoring of the observance of fishing regulations.

The RSFSR Council of Ministers was further instructed to provide for the expansion of the network of nature reserves and other protected territories in Kamchatka so that they encompass all the oblast's ecological and climatic zones with a view to preserving unique ecological entities, the variety of wildlife species, and their natural habitat and migration routes.

After the report of the USSR Ministry of Land Reclamation and Water Resources Main Administration of Land Reclamation in the Non-Chernozem Zone, measures that are being adopted by the Main Administration of Land Reclamation in the Non-Chernozem Zone to ensure the conservation, rational use, and reproduction of natural resources during land reclamation work were discussed. It was noted that substantial shortcomings exist in this work; for instance, land reclamation plans do not always provide for the preservation of natural features which are of great ecological importance, or the creation of protective forest belts along reservoirs and major canals, and adequate antierosion measures; other norms and rules governing the use of nature are also being violated.

The commission instructed the Main Administration of Land Reclamation in the Non-Chernozem Zone to improve the planning of land reclamation installation, to provide for the full range of nature conservation measures, and to adopt other measures aimed at the protection and rational use of land and water resources and the preservation of the flora and fauna in land reclamation areas.

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